

1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

Thu Apr 17 17:11:44 2014

N61 CARRIER BUILD

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SCH 051-9903
BRD 820-3486
MCO 056-6825

BOM 639-4237 (16GB, BETTER)
BOM 639-5838 (32GB, BEST)
BOM 639-5839 (64GB, ULTRA)

BOM 639-00025 (128GB, SUPREME, TLC) BOM 639-00212 (128GB, SUPREME, TLC, DTD)

NAND BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
335S0998	1	NAND, 19NM, 16GX8, MLC, PPN1.5	U0604	CRITICAL	NAND_16G
335S0993	1	NAND, 19NM, 32GX8, MLC, PPN1.5	U0604	CRITICAL	NAND_32G
335S0994	1	NAND, 19NM, 64GX8, MLC, PPN1.5	U0604	CRITICAL	NAND_64G
335S00010	1	NAND, 19NM, 128GX8, TLC, PPN1.5	U0604	CRITICAL	NAND_128G
138S0867	1	CAP, X5R, 10UF, 20%, 6.3V, 0.65MM, HRTZ, 0402	C0610, C0611, C0614, C0634	CRITICAL	NAND_16G
138S0867	1	CAP, X5R, 10UF, 20%, 6.3V, 0.65MM, HRTZ, 0402	C0613, C0633, C0610, C0611, C0614, C0634	CRITICAL	NAND_32G & NAND_64G
138S00003	1	CAP, X5R, 15UF, 20%, 6.3V, 0.65MM, HRTZ, 0402	C0613, C0633, C0610, C0611, C0614, C0634	CRITICAL	NAND_128G

ALTERNATE NAND BOM OPTIONS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
335S0992	335S0998	ALTERNATE	J0604	TOSHIBA, NAND, 16GB
335S1038	335S0998	ALTERNATE	J0604	HYNIX, NAND, 16GB
335S1040	335S0994	ALTERNATE	J0604	HYNIX, NAND, 64GB
335S00014	335S0994	ALTERNATE	J0604	TOSHIBA, NAND, 64GB
335S00015	335S00010	ALTERNATE	J0604	TOSHIBA, NAND128GB
335S00009	335S0994	ALTERNATE	J0604	SANDISK, NAND, 64GB, TLC

SHIELD BOM OPTIONS

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
604-00241	1	SUBASSY, SHIELD, UPPER FRONT, N61	SH2501	CRITICAL	COMMON
604-00242	1	SUBASSY, SHIELD, LOWER FRONT, N61	SH2502	CRITICAL	COMMON
604-00243	1	SUBASSY, SHIELD, LOWER BACK, N61	SH2504	CRITICAL	COMMON
604-00244	1	SUBASSY, SA SHIELD, N61	SH2506	CRITICAL	COMMON

N61 BOM CALLOUTS

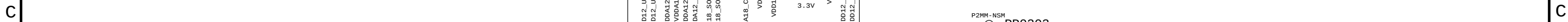
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051-9903	1	SCH, MLB, N61	SCH	CRITICAL	?
820-3486	1	PCBF, MLB, N61	PCB	CRITICAL	?
825-6838	1	EEEE FOR 639-4237 16GB	EEEE_G16T	CRITICAL	EEEE_16G
825-6838	1	EEEE FOR 639-5838 32GB	EEEE_G16R	CRITICAL	EEEE_32G
825-6838	1	EEEE FOR 639-5839 64GB	EEEE_G16Q	CRITICAL	EEEE_64G
825-6838	1	EEEE FOR 639-00025 128GB	EEEE_G16N	CRITICAL	EEEE_128G
825-6838	1	EEEE FOR 639-00208 16GB	EEEE_F98F	CRITICAL	EEEE_16G_TDDLTE
825-6838	1	EEEE FOR 639-00209 32GB	EEEE_FQK8	CRITICAL	EEEE_32G_TDDLTE
825-6838	1	EEEE FOR 639-00210 64GB	EEEE_FQJY	CRITICAL	EEEE_64G_TDDLTE
825-6838	1	EEEE FOR 639-00212 128GB	EEEE_FY9W	CRITICAL	EEEE_128G_TLC_TDDLTE

ALTERNATE BOM OPTIONS

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
152S1844	152S1836	ALTERNATE	L1604	TY ALT INDUCTOR
152S1842	152S1849	ALTERNATE	L1519	TY ALT INDUCTOR
197S0392	197S0369	ALTERNATE	Y1200	ESPON ALT XTAL
197S0399	197S0369	ALTERNATE	Y1200	NDK ALT XTAL
338S1285	338S1262	ALTERNATE	U1601	L21 SPKAMP
152S2034	152S2033	ALTERNATE	L1209, L1211, L1213	1.2MM 1.00UH, CYNTEC
152S00004	152S2049	ALTERNATE	L1210, L1212, L1214	1.2MM 0.47UH, CYNTEC
339S00005	339S0246	ALTERNATE	U0201	FIJI, B0, SAMSUNG
339S0247	339S0246	ALTERNATE	U0201	FIJI, B0, HYNIX
339S00006	339S0246	ALTERNATE	U0201	FIJI, B1, E
339S00007	339S0246	ALTERNATE	U0201	FIJI, B1, H
339S00008	339S0246	ALTERNATE	U0201	FIJI, B1, S
155S0773	155S0453	ALTERNATE		TY 1200HM FERRITE
118S0764	118S0717	ALTERNATE	R1309	3.92KOHM, 01005
343S0688	343S0638	ALTERNATE	U2401	CUMULUS C1, FAB4
138S00005	138S00003	ALTERNATE	C1290	15UF, 0402, HRTZL CAP
155S00011	155S00008	ALTERNATE	L1135	CMC, 900HM, MURATA
377S0168	377S0140	ALTERNATE	DZ1113	SUPPL, TRANS, VARISTOR, ANOTECH
155S0005	155S0610	ALTERNATE	FL1892, FL1809	FERR BD, 1500HM, 200MA, 01005
138S0648	138S0652	ALTERNATE	C1018	CAP, 4.7UF, 20%, 6.3V, 0402, HNB, 650M
138S0657	138S0702	ALTERNATE	C1106	CAP, 4.3UF, 20%, 4V, 0610
338S00028	338S00017	ALTERNATE	U2203	CARBON, BOSCH, BM1162BC
338S00029	338S00017	ALTERNATE	U2203	CARBON, ST, AP60S2AA
335S00013	335S0894	ALTERNATE	J0301	ST 8K EEPROM

DRAWING TITLE			
SCHEM, MLB, N61			
 Apple Inc.	DRAWING NUMBER	051-9903	SIZE D
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		SHEET	1 OF 54

D D



2 XSR-2 GERM 03005

10k

10k

10k

5V

AG29

FAST_SCAN_CLK

B

[illegible]

8	7	6	5	4	3	2	1
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FIJI: DIGITAL I/O, BOOTSTRAPPING

D

C

B

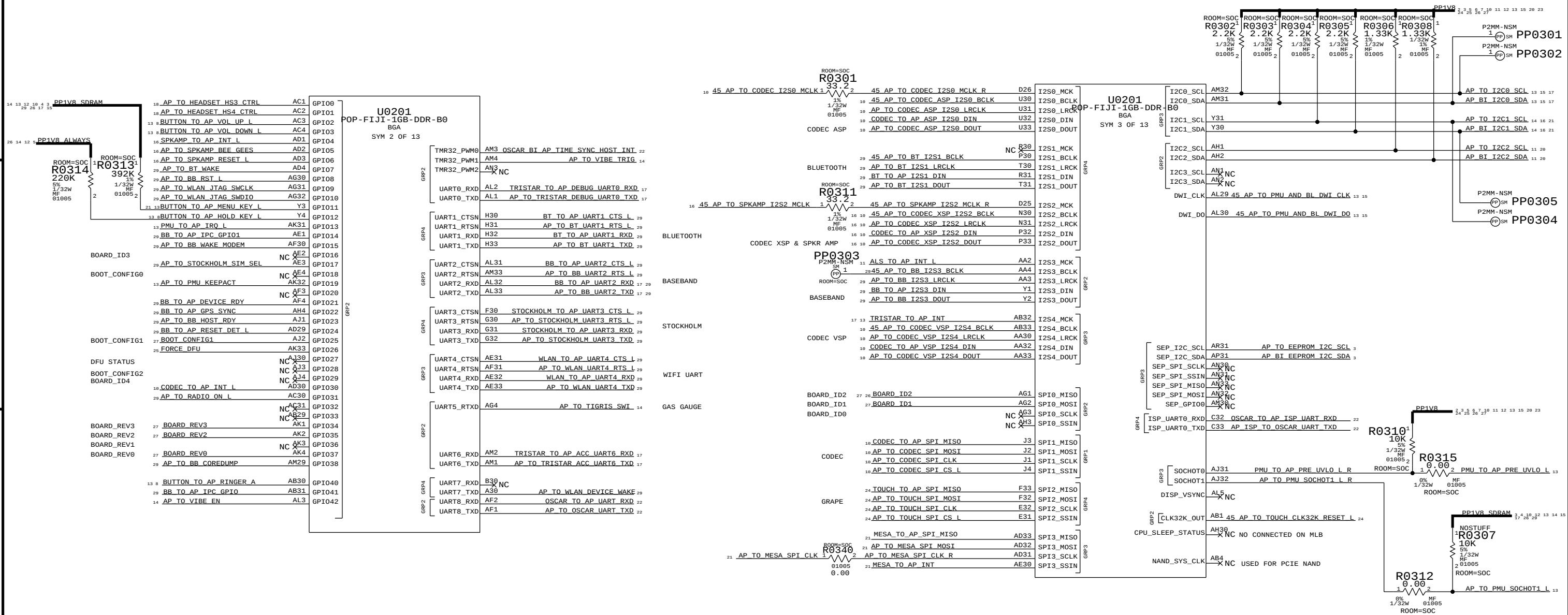
A

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A



ANTI-ROLLBACK EEPROM
ONSEMI EEPROM
APN: 335S0894

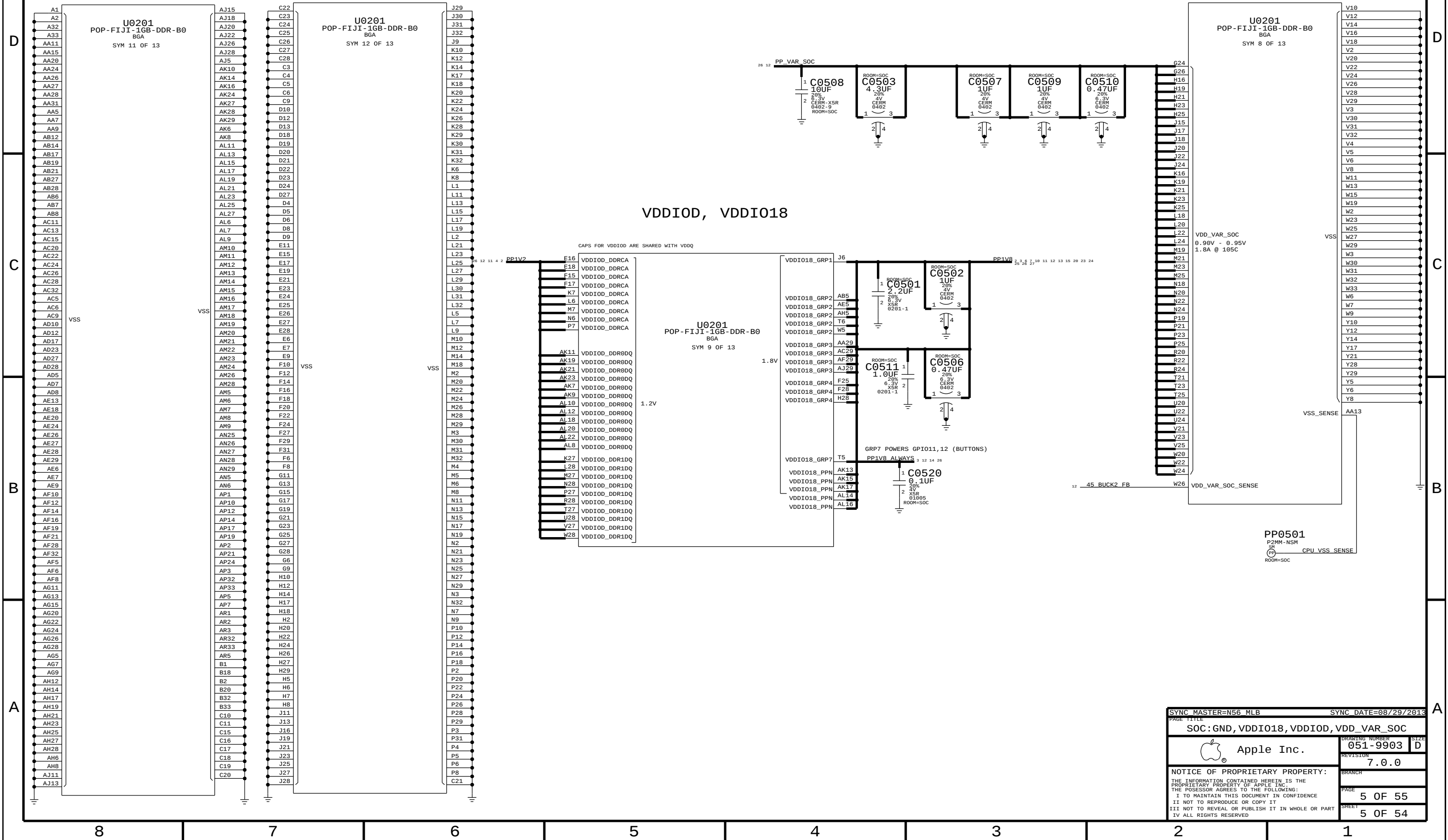
REMOVED HOLD + MENU KEY
BUFFERS SINCE NOT NEEDED FOR FIJI

SYNC MASTER=N56 MLB		SYNC DATE=08/29/2013	
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FIJI: VDDIOD, VDDIO18, VDD_VAR_SOC

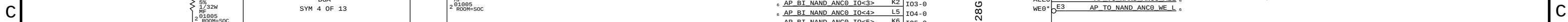
JUST A FEW GNDS

VDD_SRAM, VDD_SOC



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PAGE TITLE		SOC: GND, VDDIO18, VDDIOD, VDD_VAR_SOC	
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D | D

[illegible]

Schematic diagram of the R0609 power supply circuit. The circuit includes a transformer with primary windings B2, B1, and B3, and secondary windings F6, L3, A7, M2, D09, D08, D07, and D06. The primary is connected to a 243V AC source. The secondary windings are connected to a bridge rectifier (R0609) and a filter capacitor (C01). The output is connected to a load (R0609) and a fuse (F01).



8	7	6	5	4	3	2	1
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NOTE: IS A FERRITE NEEDED? THERE ARE DCR CONCERNS.

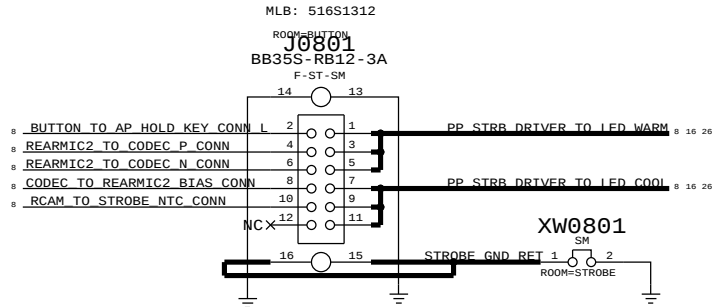
[illegible]

BUTTON FLEX (BUTTONS, ANC REF MIC, STROBE, STROBE_NTC, WIFI FLEX PAC)

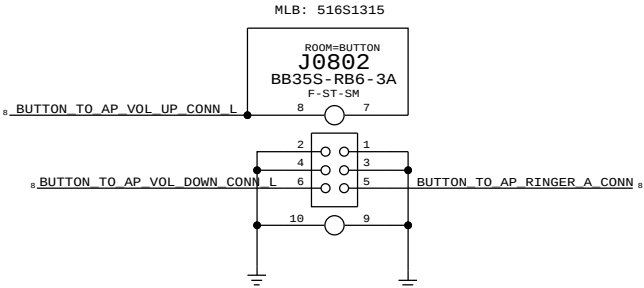
MIC2 (ANC REF MIC):
MIC2/4 BIAS,
MIC2_P,_N

BUTTONS:
RINGER, HOLD,
VOL_UP/DOWN,

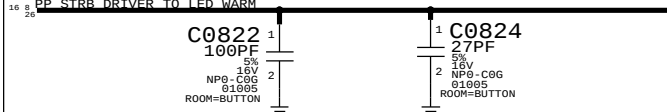
RIGHT BUTTON B2B



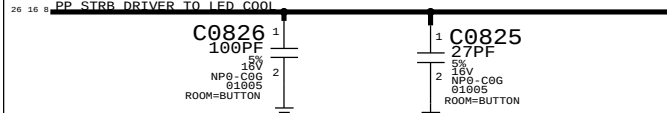
LEFT BUTTON B2B



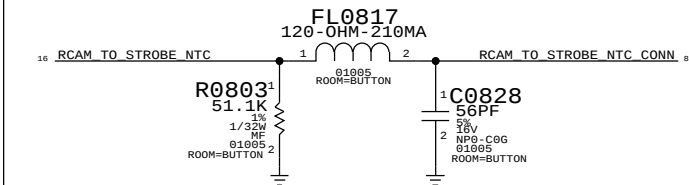
STROBE:
LED WARM



STROBE:
LED COOL



STROBE:
NTC

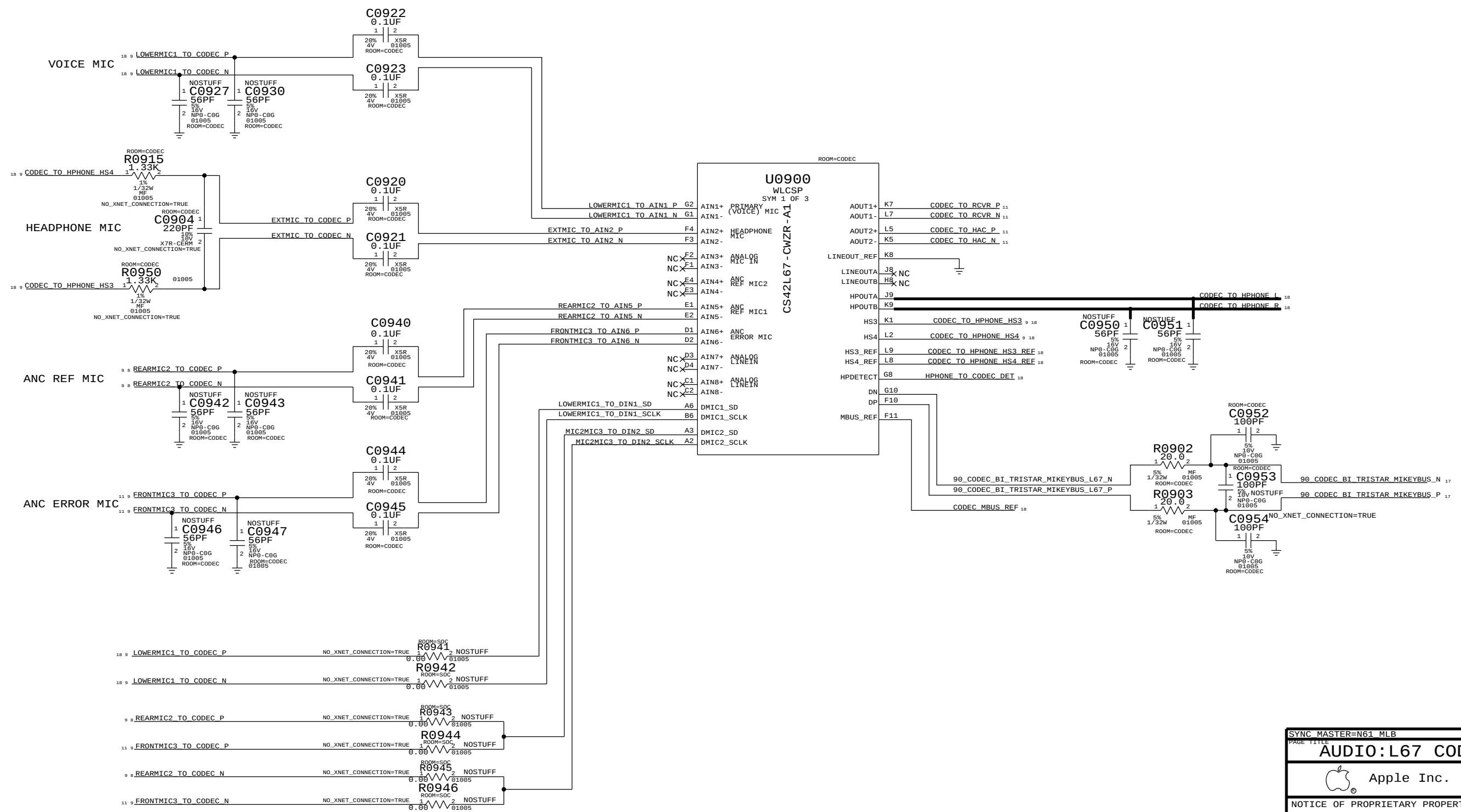


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L67 AUDIO CODEC

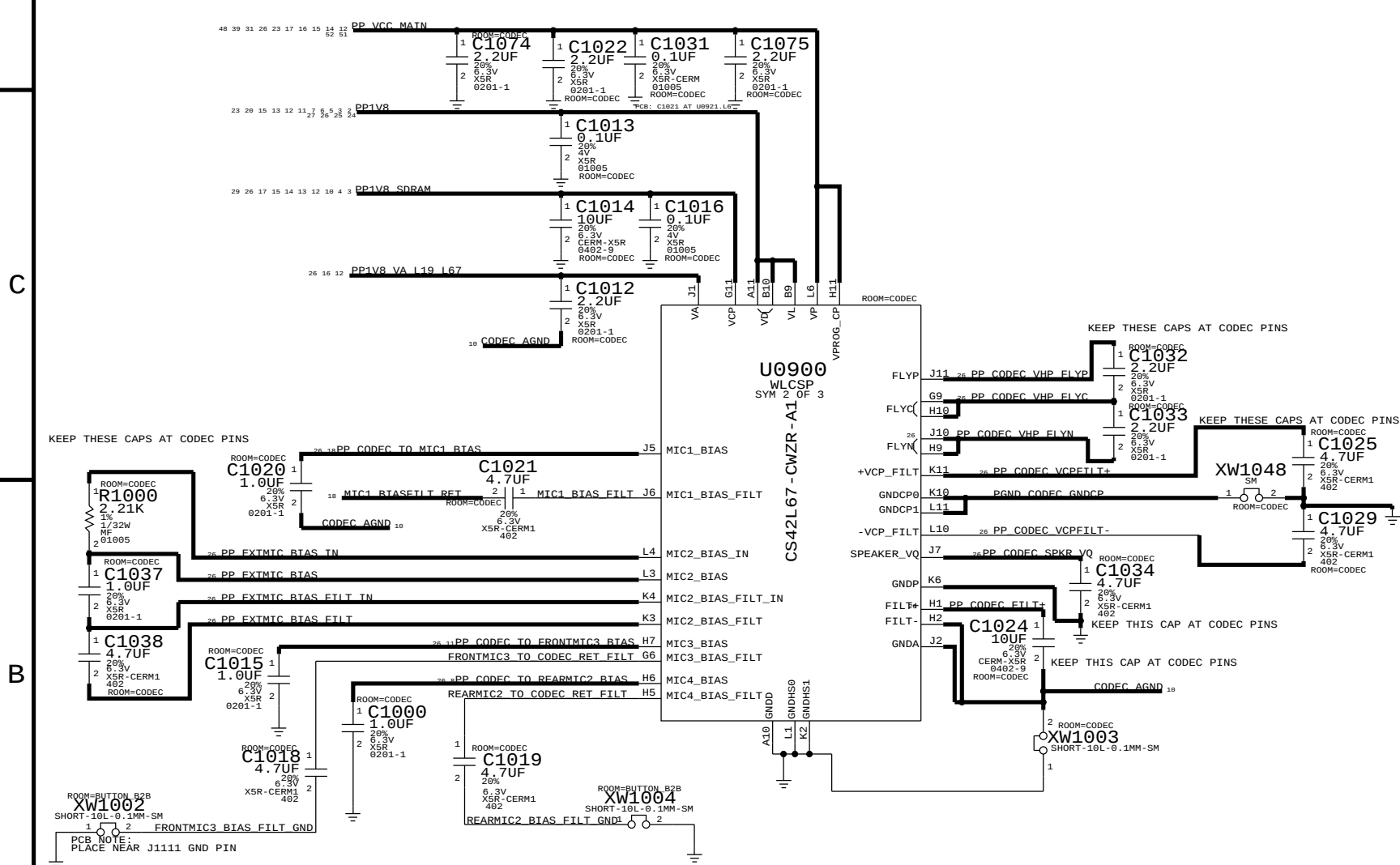
AUDIO I/O

(ANALOG MIC IN, DIG MIC IN, HPOUT, LINEOUT, RECEIVER OUT, MIKEYBUS)

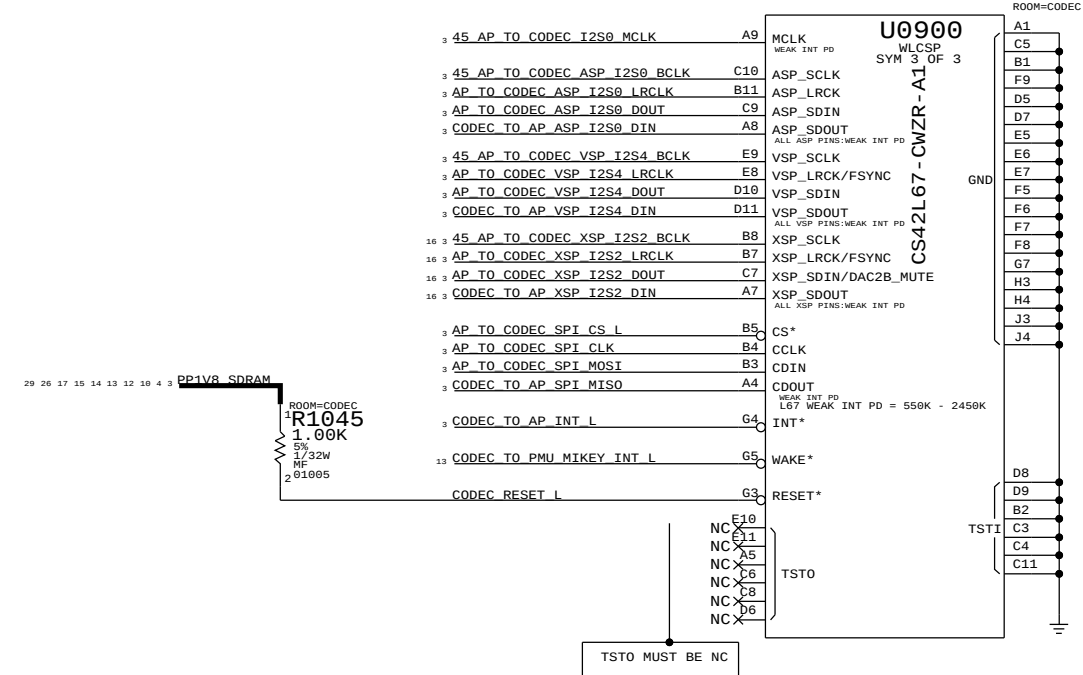


D

ADDITIONAL	NEARBY	VCC	MAIN	CAPS



$\mathbb{D} = \mathbb{C} = 1, \mathbb{A} = \mathbb{C}, \mathbb{B} = \mathbb{C}, \mathbb{C} = 1, \mathbb{D} = 1, \mathbb{E} = 1, \mathbb{F} = 1, \mathbb{G} = 1$



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PAGE TITLE		A	
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FRONT CAM FLEX B2B

(FCAM, PROX, ALS, RECEIVER, ANC ERROR MIC)

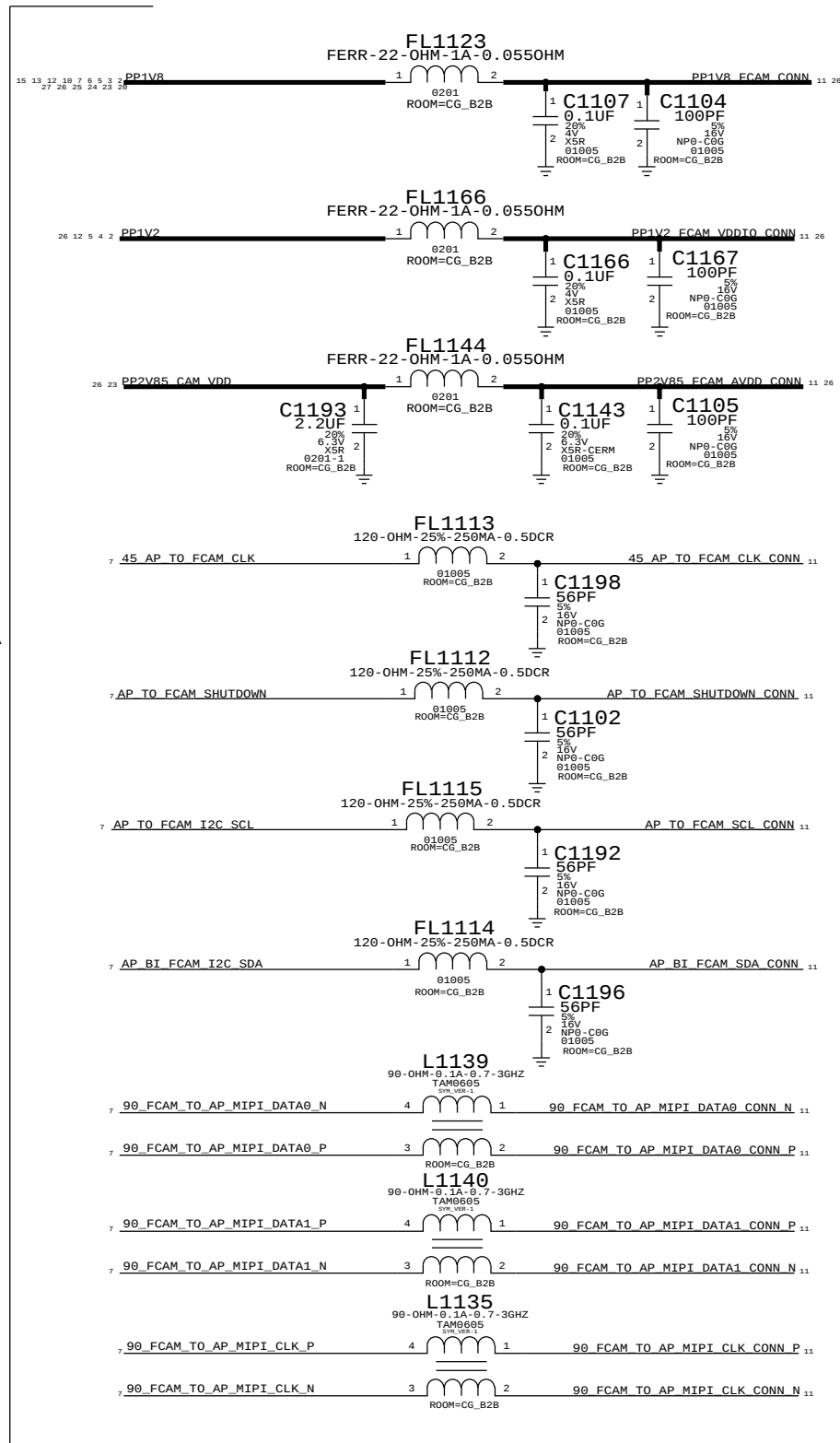
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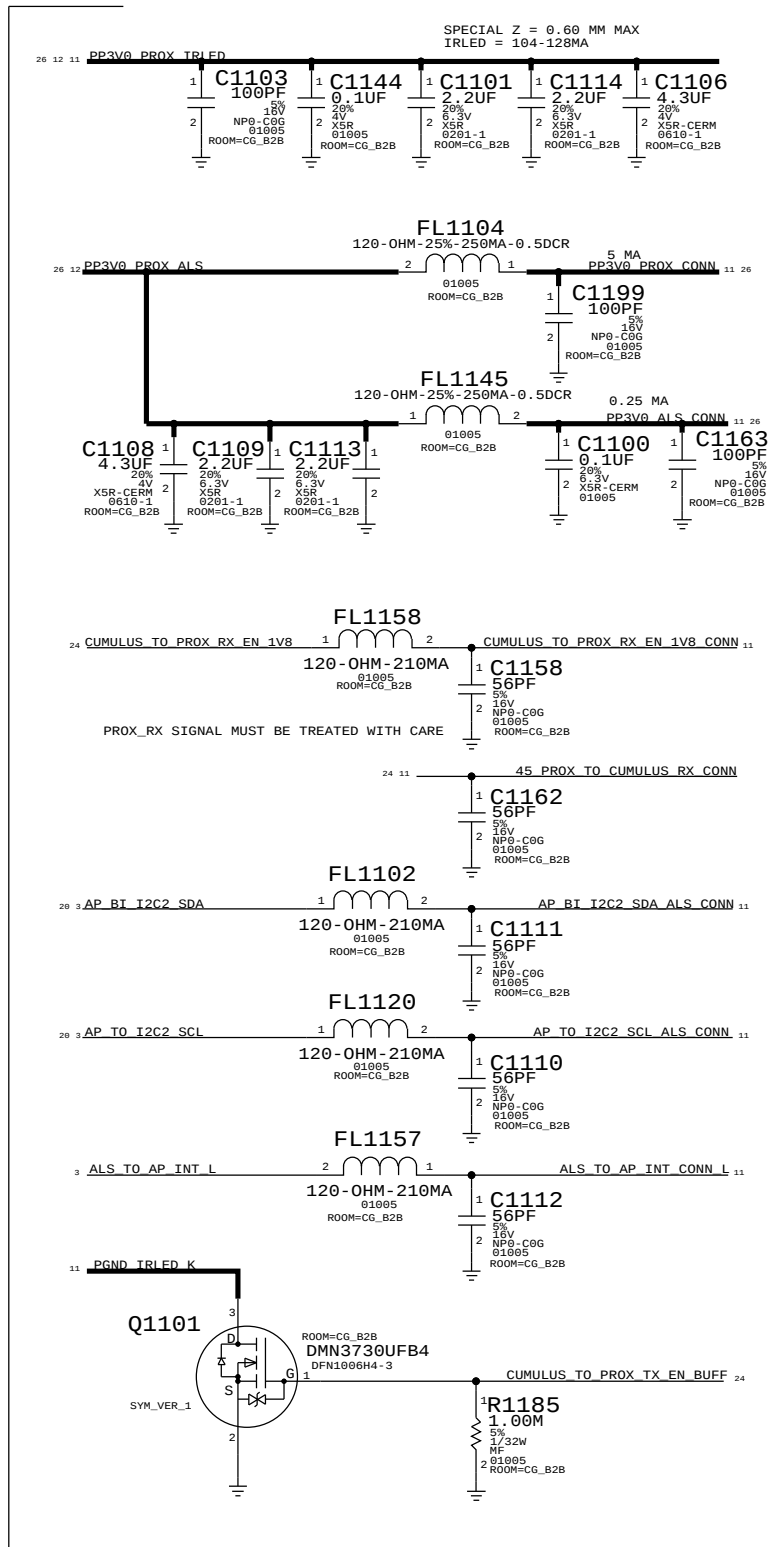
CAMERA

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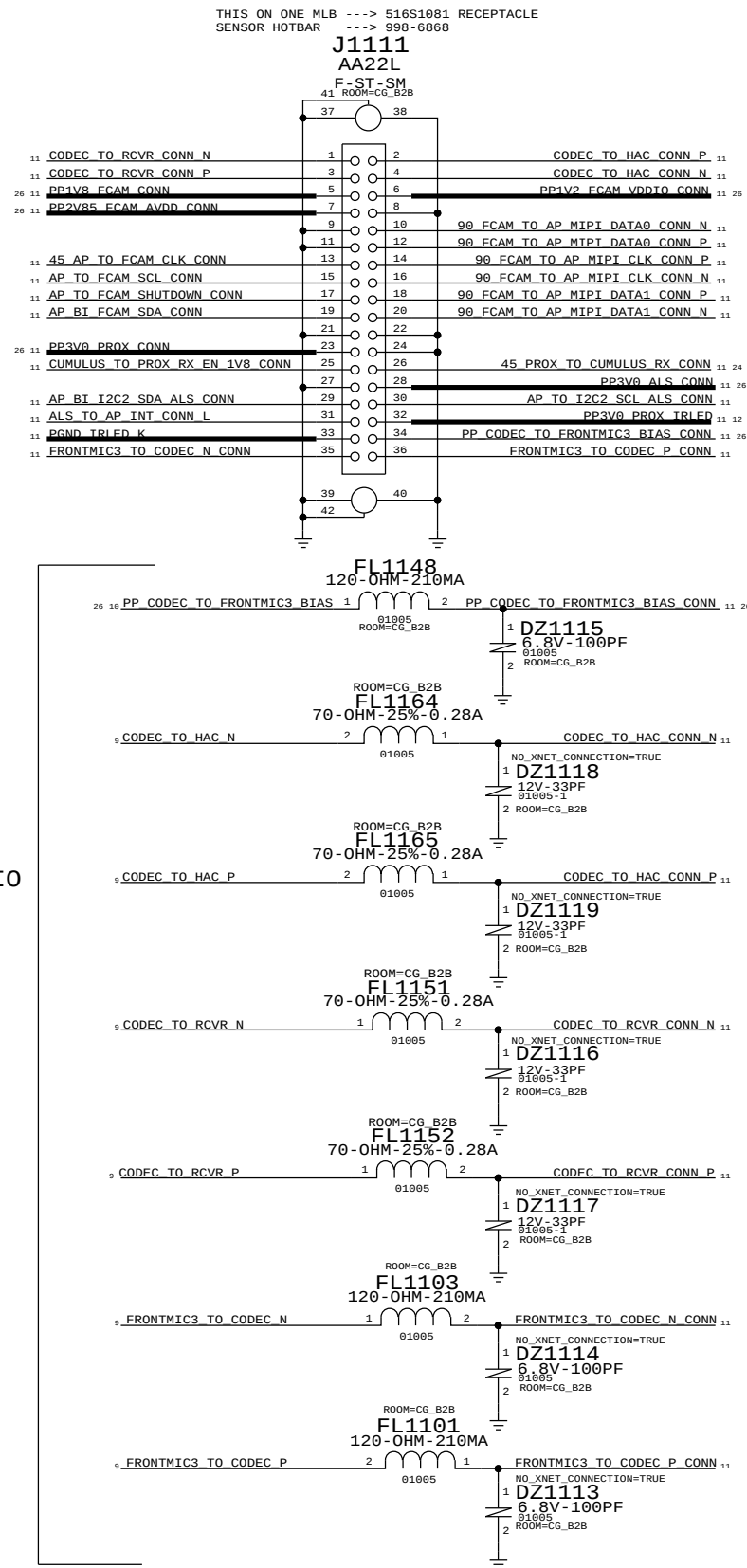
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ALS,
PROX



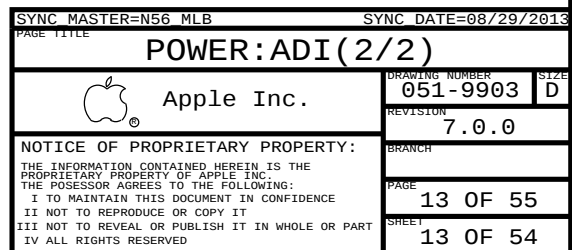
AUDIO



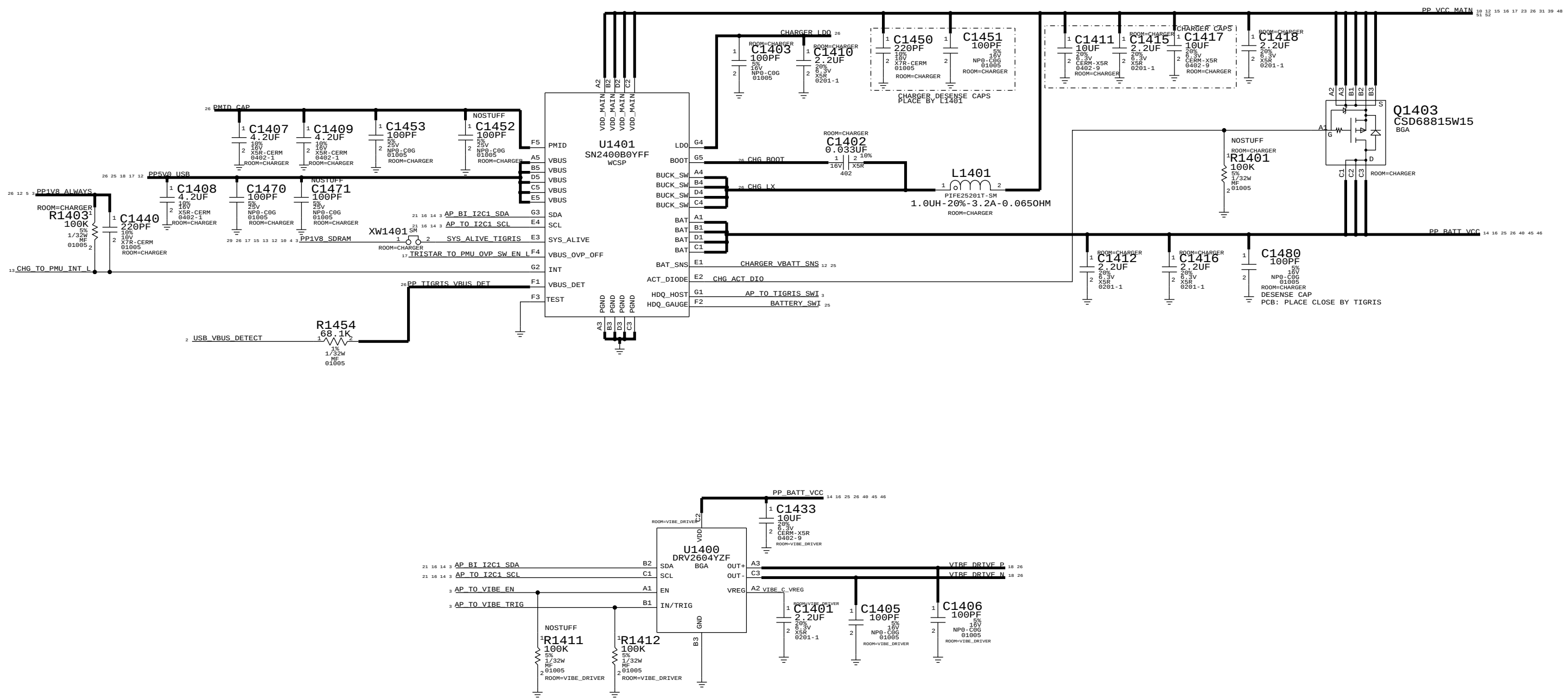
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D





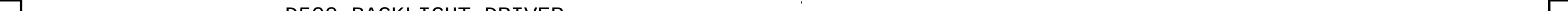
TIGRIS CHARGER & VIBE DRIVER



PAGE TITLE		
POWER:TIGRISR,VIBE DRIVER		
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D

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B

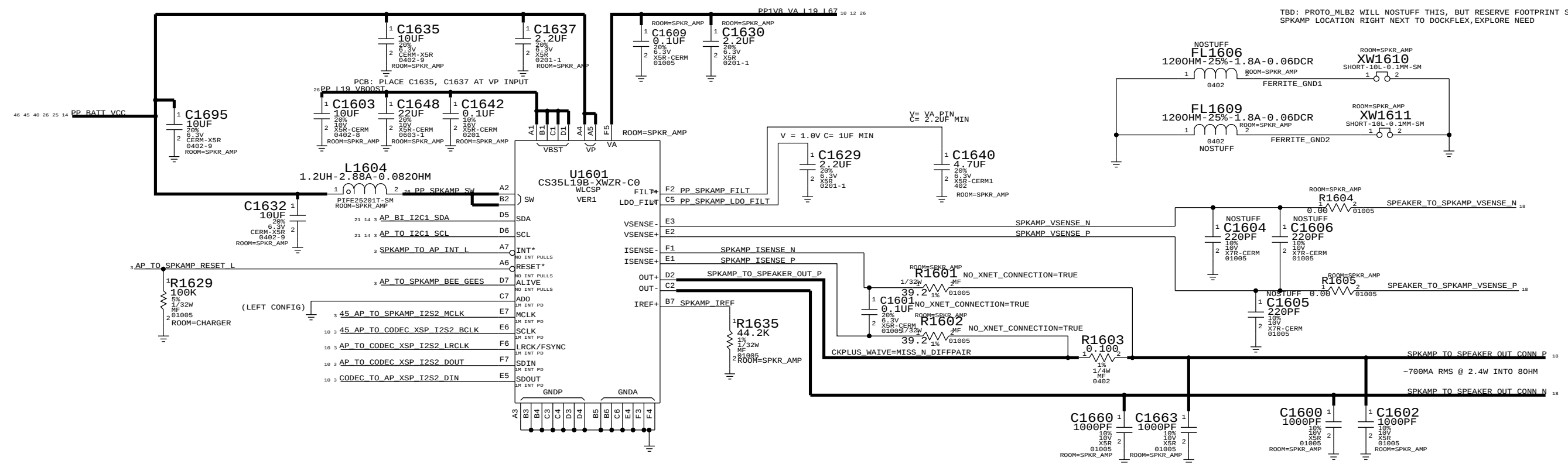


8	7	6	5	4	3	2	1
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SPEAKER AMP, LED DRIVER

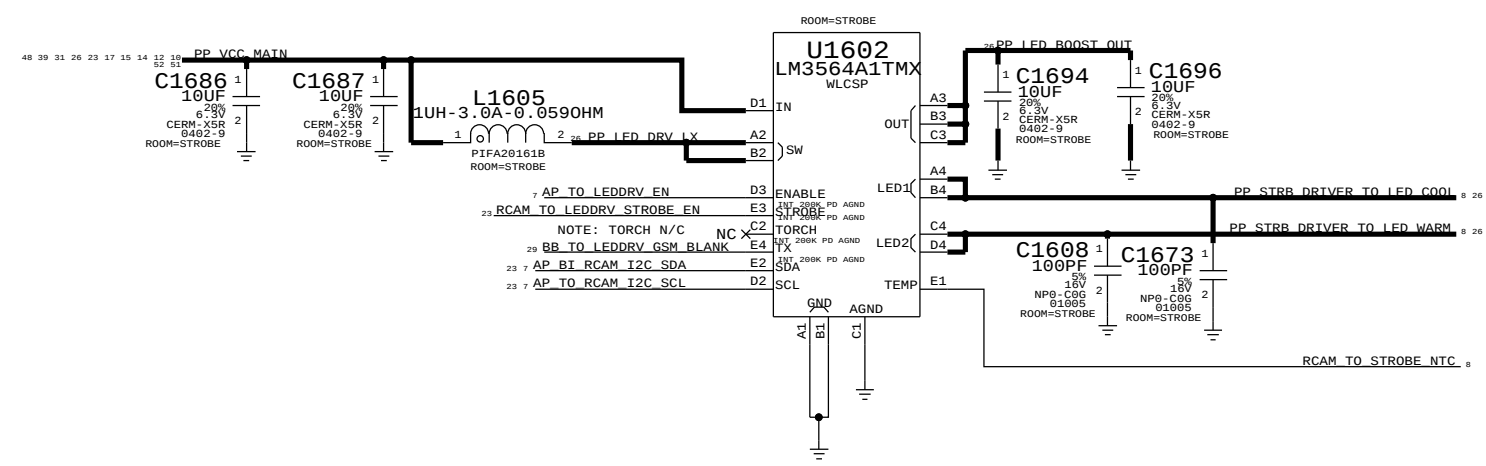
SPEAKER AMP

I2C ADDRESS: 1000000X



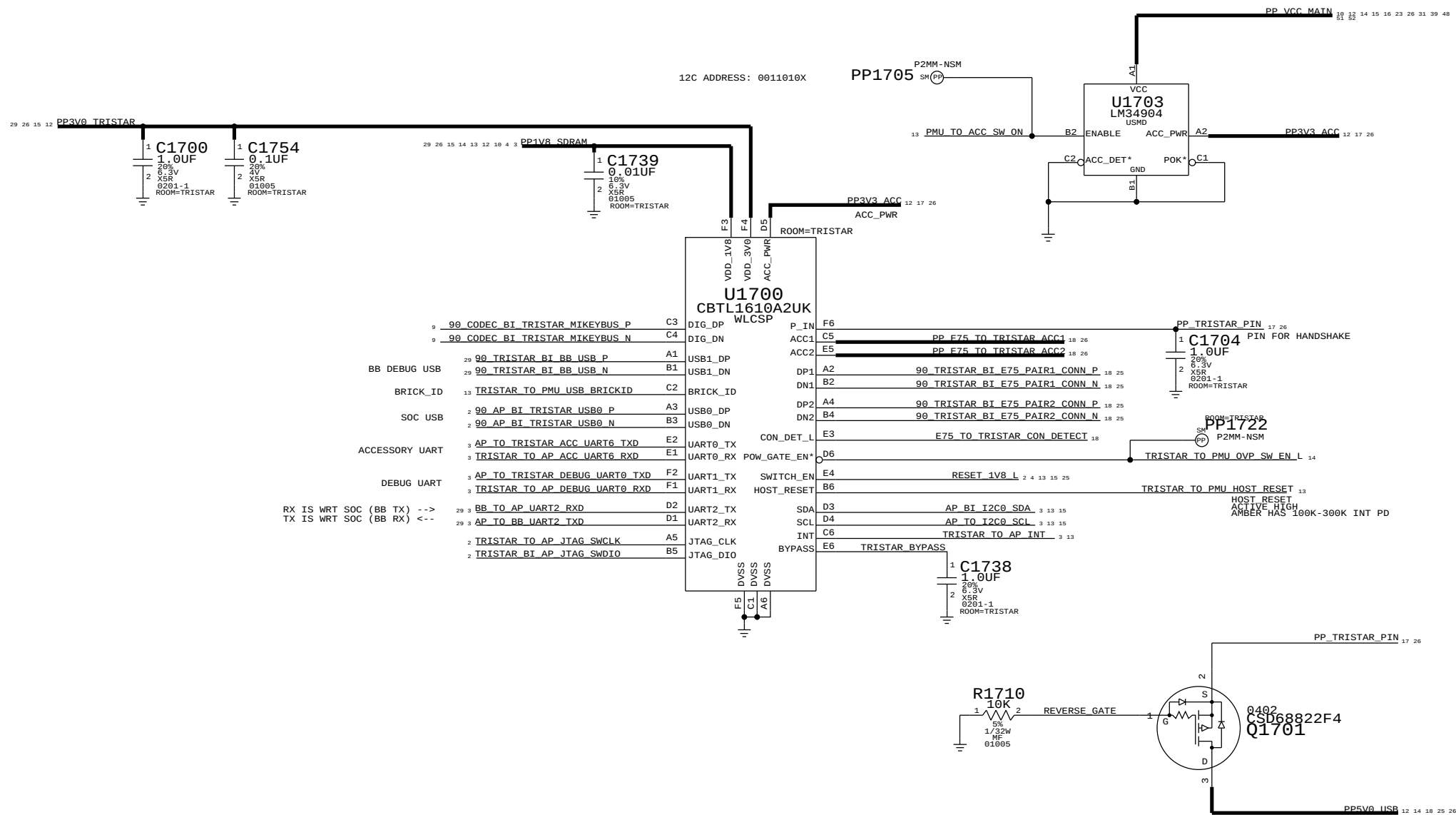
STROBE DRIVER

TI: APN 353S3899



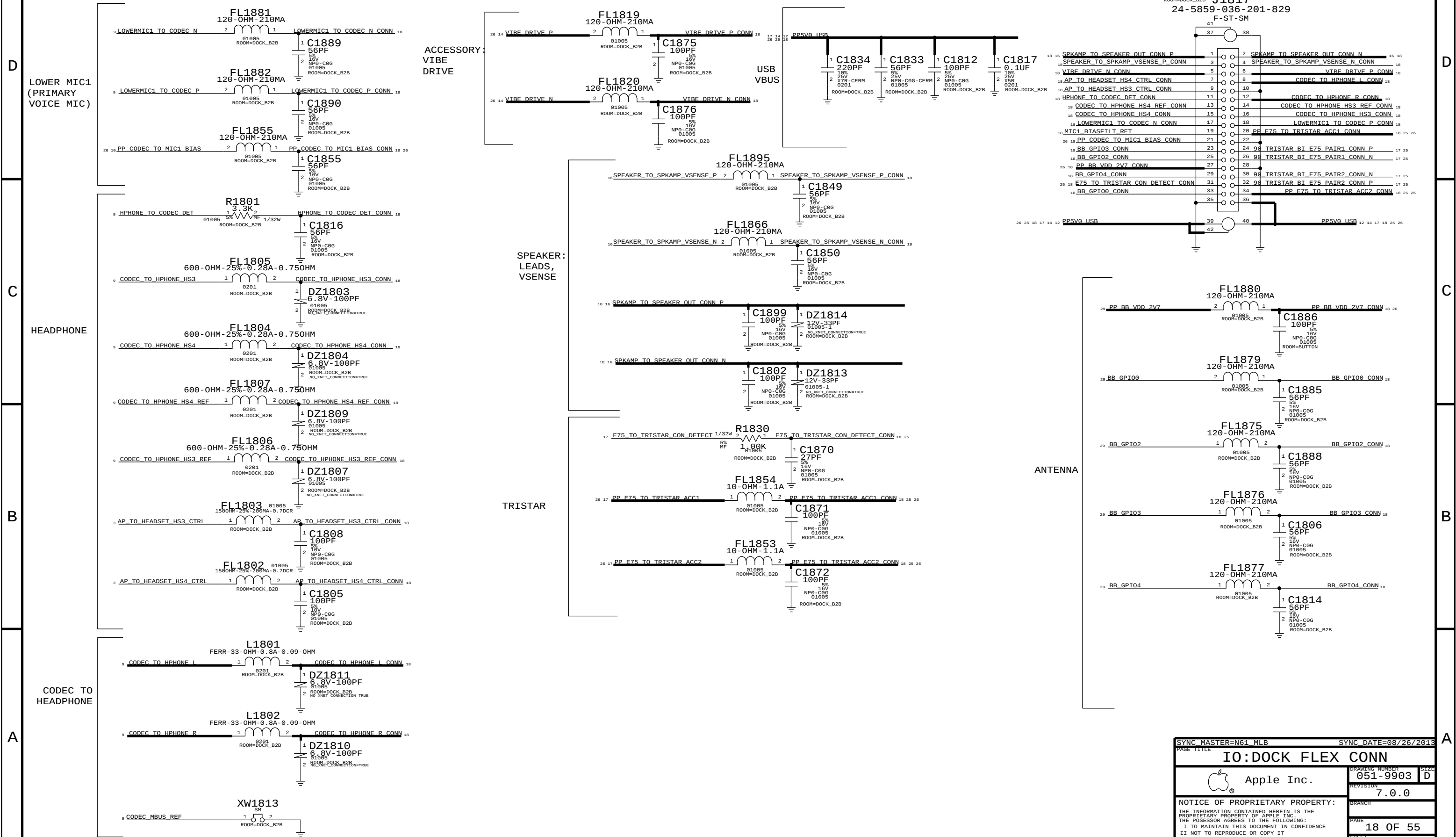
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TRISTAR2



SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
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		SHEET	17 OF 54

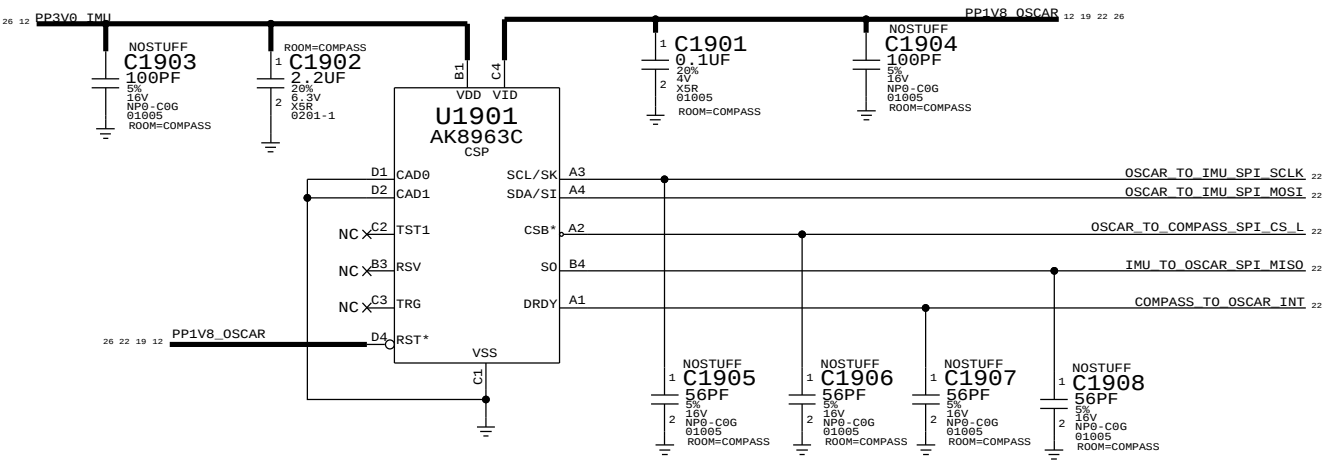
DOCKFLEX B2B (USB VBUS, SPEAKER, ANTENNA LAT SW CTRL MIC1 (PRIMARY MIC), ACC DET/ID/PWR, E75 DIFFPAIRS)



SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
PAGE TITLE		IO:DOCK FLEX CONN	
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		REVISION	7.0.0
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		PAGE	18 OF 55
		SHEET	18 OF 54

COMPASS - AKM COMPASS IN POR LOCATION

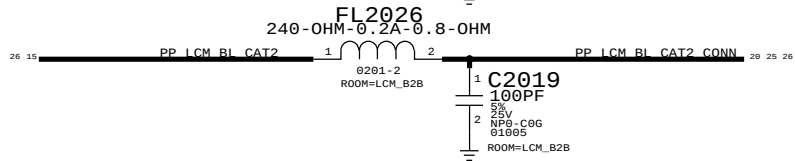
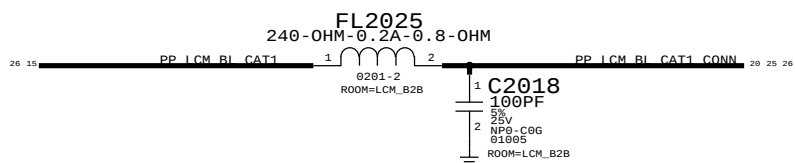
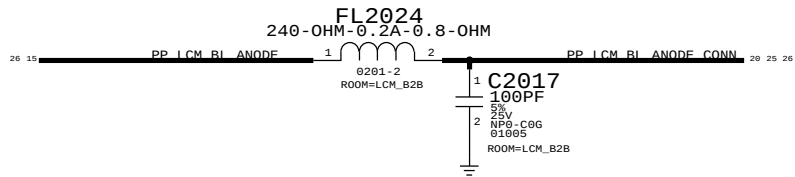
COMPASS CSP: 338S1014



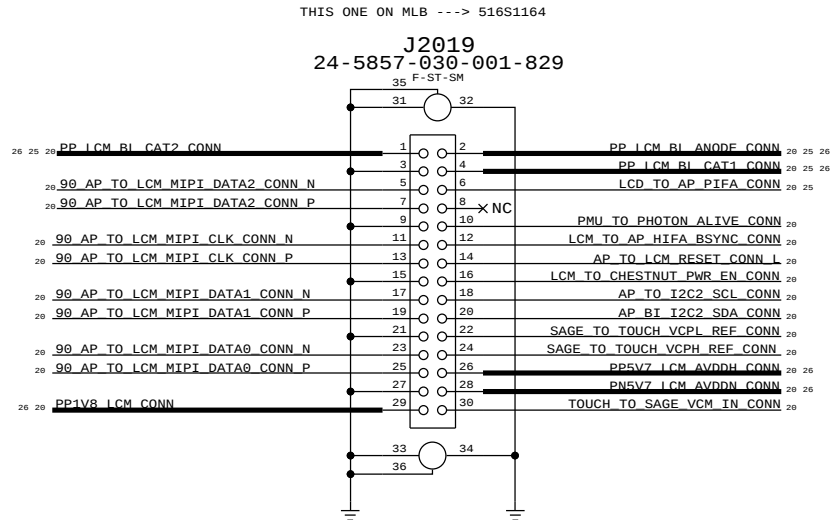
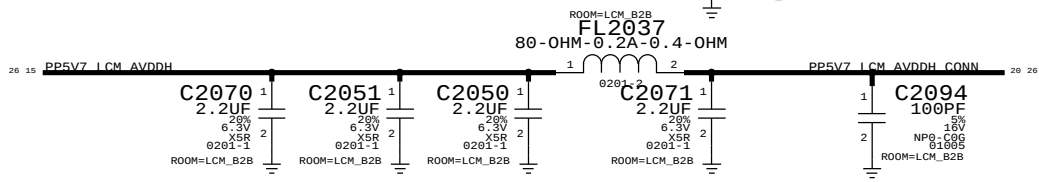
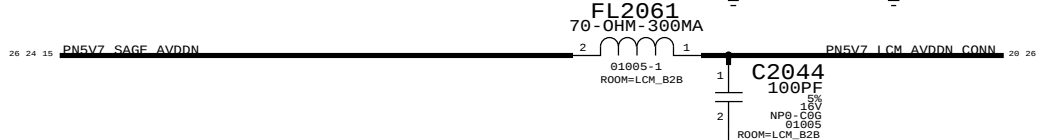
LCD B2B

Backlight

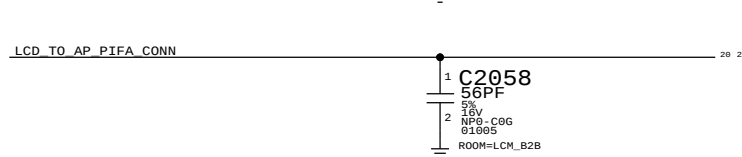
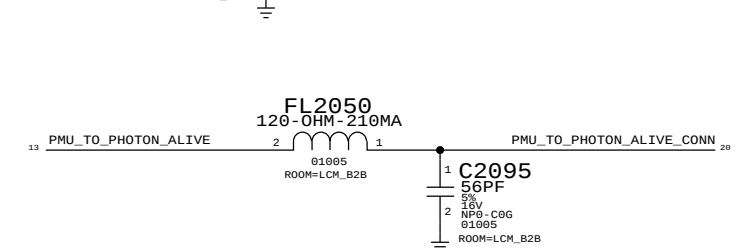
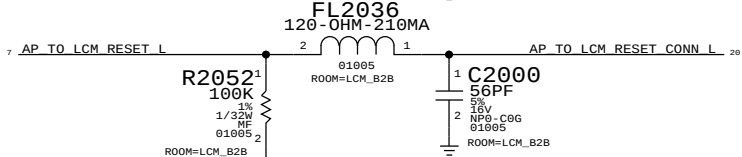
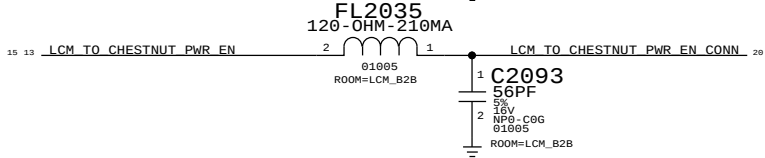
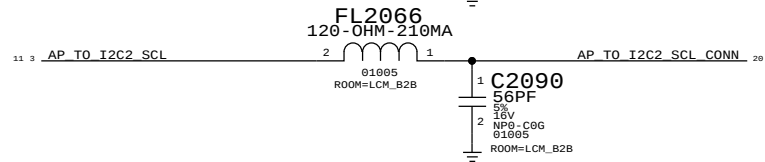
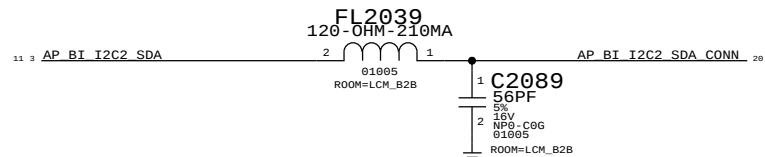
(N56 HAS A 2ND SET OF BL SIGNALS ON P. 19).



LCM Supplies

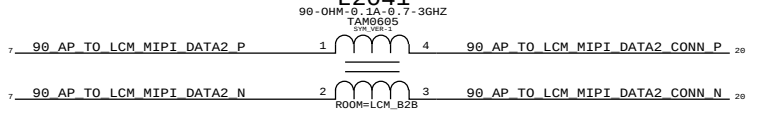
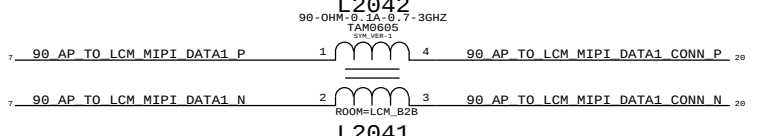
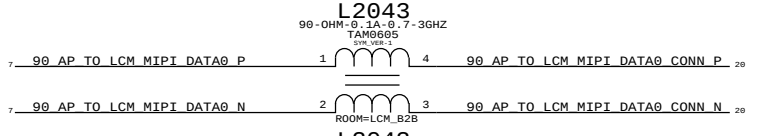
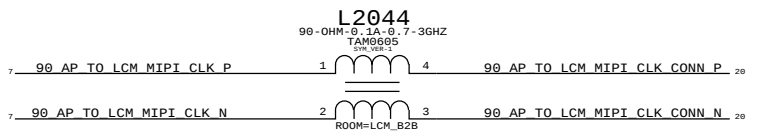


Digital Interfaces

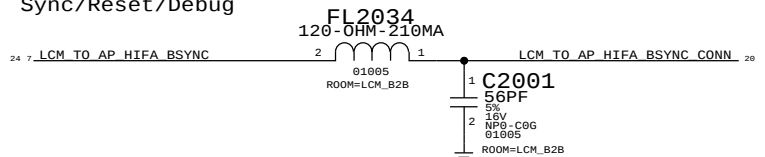


MIPI Common Mode Chokes

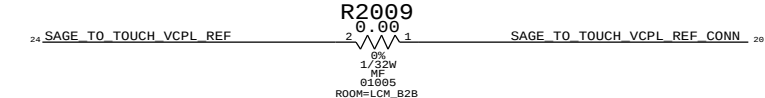
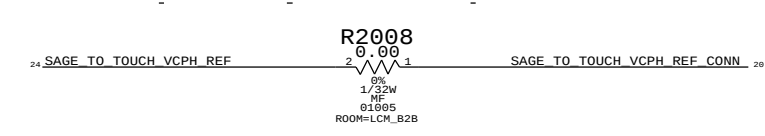
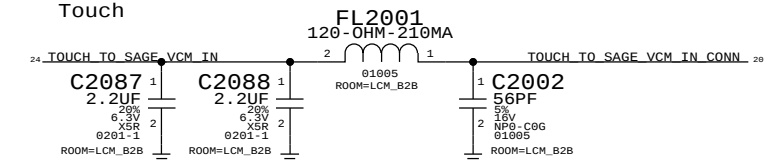
(N56 HAS A 4TH MIPI LANE ON P. 19).



Sync/Reset/Debug

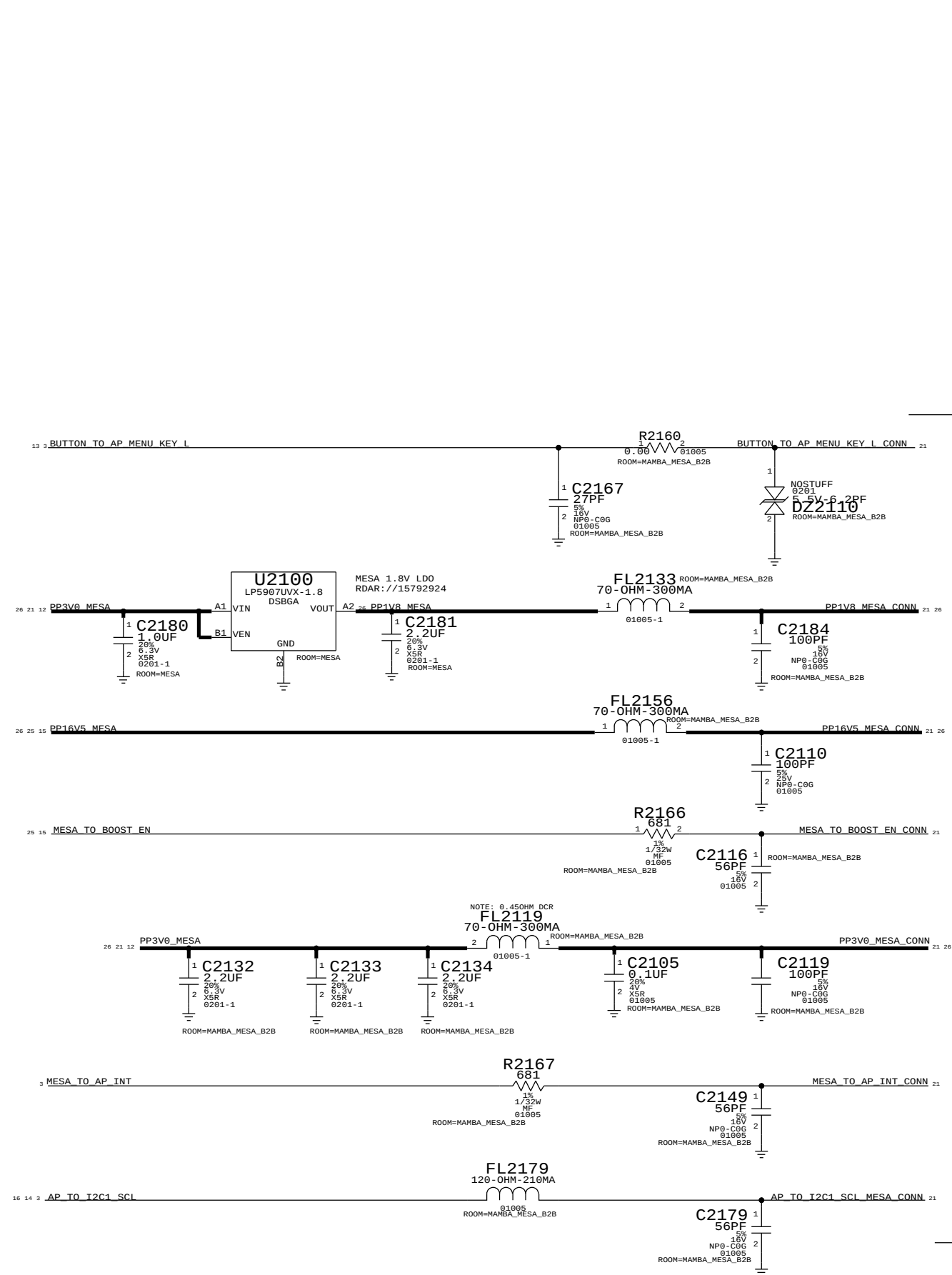


Touch

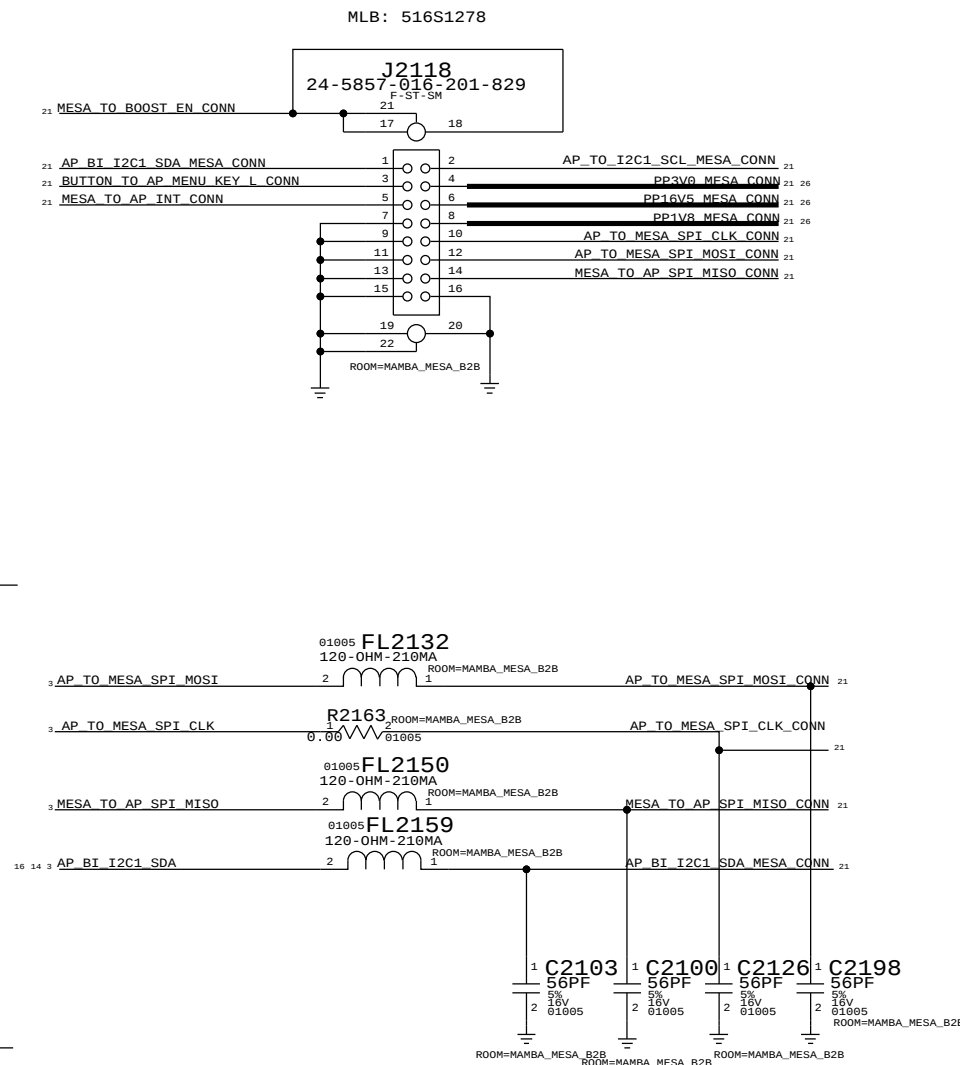


SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
PAGE TITLE		DISPLAY:FLEX CONN	
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		PAGE	20 OF 55
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MESA CONNECTOR



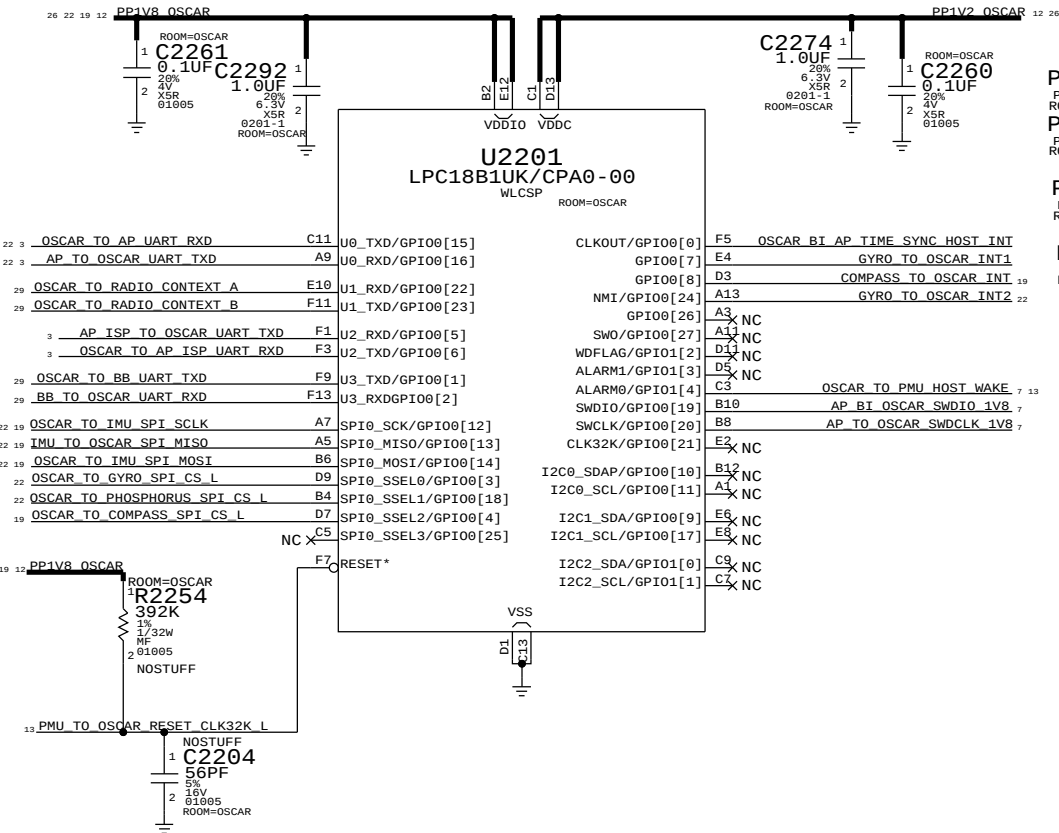
MESA SENSOR:



PAGE TITLE		
SENSORS:MESA FLEX CONN		
 Apple Inc.	DRAWING NUMBER	051-9903
	REVISION	7.0.0
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		SHEET 21 OF 54

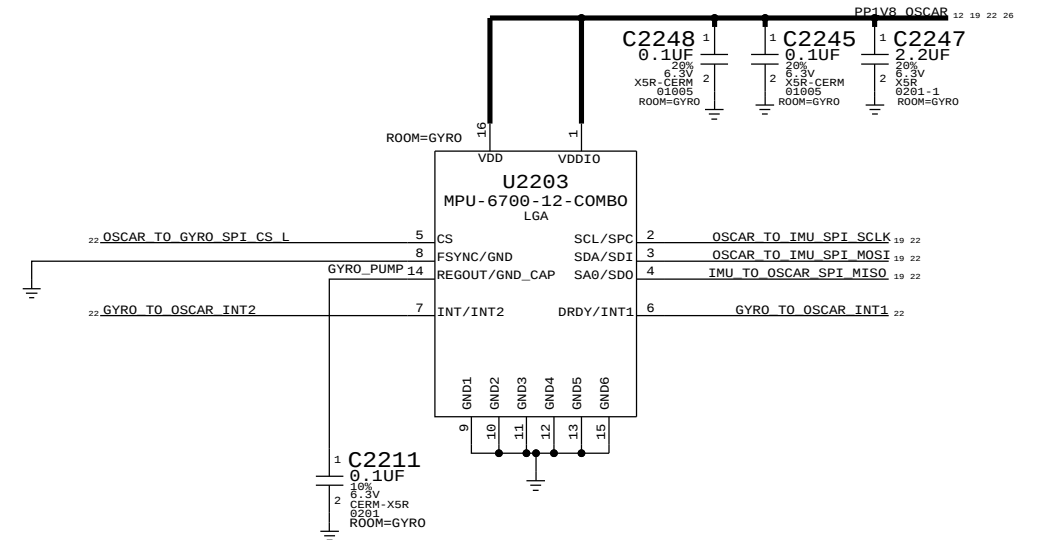
OSCAR + SENSORS

OSCAR VDDIO = 1.8V ALWAYS ON (NEED TO WAKE HOST & RUN PLL)
OSCAR CORE = 1.2V ALWAYS ON (NEED TO RUN IN S2RAM)

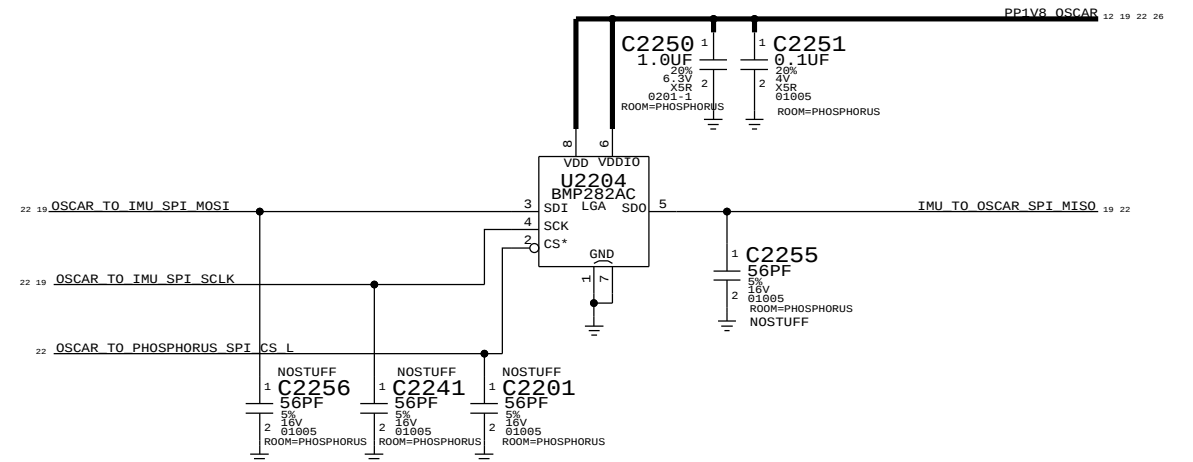


CARBON (ACCEL GYRO COMBO)

INVENSENSE, APN 338S00017, C2211=0.1UF
BOSCH, APN 338S00028, C2211=0.1UF
ST, APN 338S00029, C2211=0.01UF, 25V



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SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
PAGE TITLE			
SENSORS: OSCAR, CARBON, PHOS, MAGNESIUM			
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RCAM B2B (REAR CAMERA CONNECTOR)

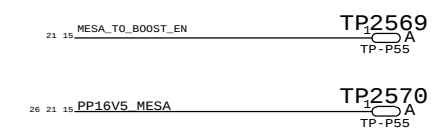
RCAM:
4-LANE MIPI

RCAM:
DIGITAL I/F
(I2C, CTRL, CLK)

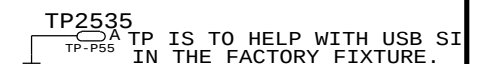
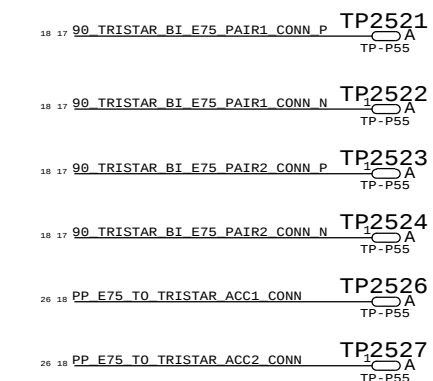
RCAM/FCAM AVDD RAIL EXT. LDO:

RCAM:
POWER:
(1.8V DVDD)
(2.8V AVDD)
(1.2V VCC)
(1.8V/2V AF)

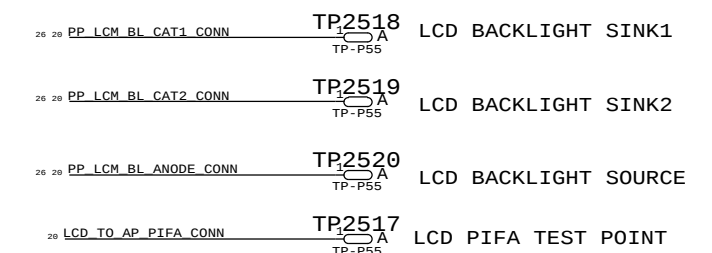
SYNC MASTER=N61 MLB		SYNC DATE=08/26/2013	
PAGE TITLE		CAMERA:REAR FLEX CONN	
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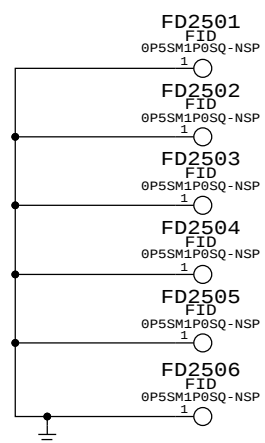
E75 - USB/UART/ID/POWER



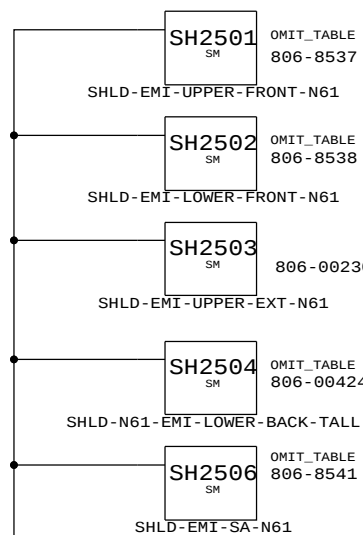
LCM BACKLIGHT



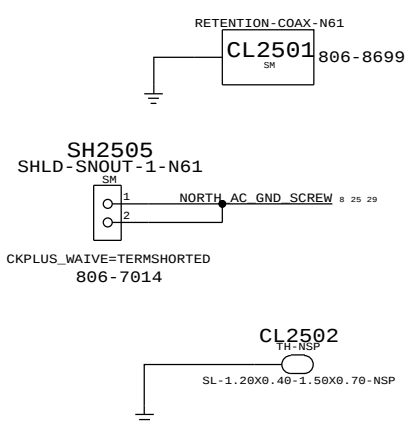
FIDUCIALS



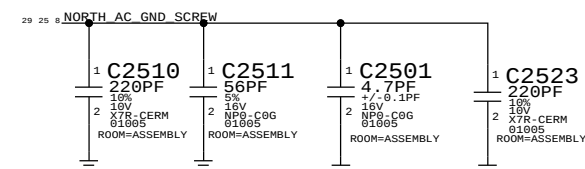
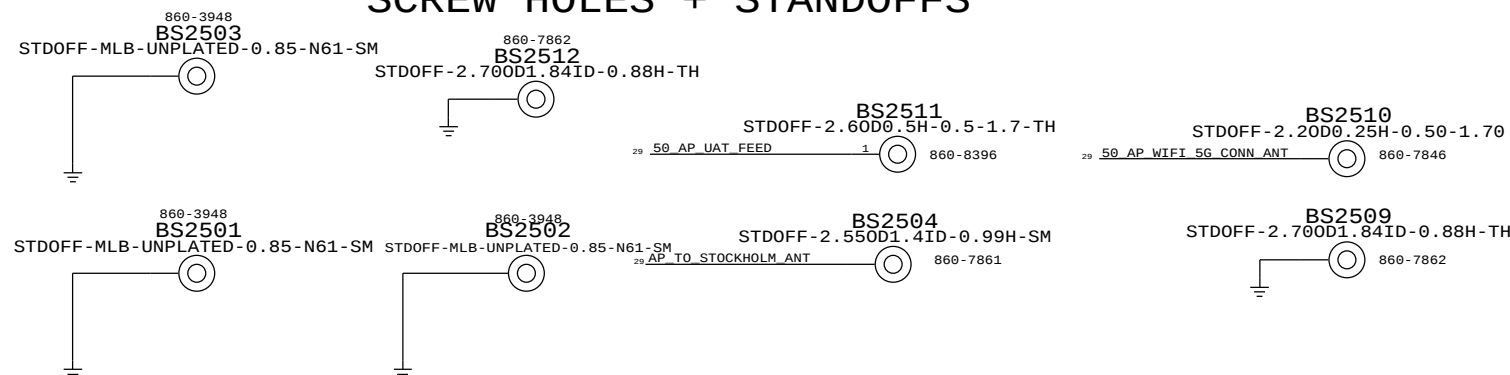
SHIELDS



COWLING



SCREW HOLES + STANDOFFS



SYMC MASTER=N61 MLB		SYMC DATE=08/26/2013	
PAGE TITLE			
POWER: BATT CONN, TPS, PD FEATURES			
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		SHEET 25 OF 54	

VOLTAGE PROPERTIES

1E65	VOLTAGE=3.3V	PP3V3_USB	2 12
1E66	VOLTAGE=1.8V	PP1V8_VA_I19_I67	10 12 16
1E67	VOLTAGE=3.0V	PP3V0_TRISTAR	12 15 17 29
1E68	VOLTAGE=3.0V	PP3V0_IMU	12 19
1E69	VOLTAGE=3.0V	PP3V0_NAND	6 12
1E6A	VOLTAGE=3.0V	PP3V0_ACC	12 17
1E6B	VOLTAGE=3.0V	PP3V0_PROX_ALS	11 12
1E6C	VOLTAGE=4.6V	PP_VCC_MAIN	10 12 14 15 16 17 23 31 39
1E6D	VOLTAGE=1.0V	PP1V0	7 12
1E6E	VOLTAGE=3.0V	PP3V0_PROX_TRIED	11 12
1E6F	VOLTAGE=1.8V	PP1V8_ALWAYS	3 5 12 14
1E70	VOLTAGE=3.0V	PP3V0_MESA	12 21
1E71	VOLTAGE=1.1V	PP_CPU	4 12
1E72	VOLTAGE=1.1V	PP_GPU	4 12
1E73	VOLTAGE=1.2V	PP1V2_SDRAM	2 4 12 23
1E74	VOLTAGE=1.8V	PP1V8_SDRAM	3 4 10 12 13 14 15 17 29
1E75	VOLTAGE=1.8V	PP1V8	2 4 5 7 10 11 12 13 15 20 23
1E76	VOLTAGE=1.8V	PP1V8_GRAPE	12 24
1E77	VOLTAGE=1.8V	PP1V8_OSCAR	12 19 22
1E78	VOLTAGE=1.2V	PP1V2_NAND_VDDT	6
1E7A	VOLTAGE=1.8V	PP_EXTMTC_BIAS_FILT_IN	10
1E7B	VOLTAGE=1.8V	BOARD_ID2	3 27
1E7C	VOLTAGE=1.2V	PP1V2	2 4 5 11 12
1E7D	VOLTAGE=5.0V	PP_E75_TO_TRISTAR_ACC1_CONN	10 25
1E7E	VOLTAGE=5.0V	PP_E75_TO_TRISTAR_ACC1	17 18
1E7F	VOLTAGE=22.0V	PP_LCM_BI_ANODE	15 20
1E80	VOLTAGE=0.2V	PP_LCM_BI_CAT2	15 20
1E81	VOLTAGE=0.2V	PP_LCM_BI_CAT1	15 20
1E82	VOLTAGE=0.2V	PP_LCM_BI_CAT2_CONN	20 25
1E83	VOLTAGE=0.2V	PP_LCM_BI_CAT1_CONN	20 25
1E85	VOLTAGE=-5.7V	PN5V7_SAGE_AVDDN	15 20 24
1E86	VOLTAGE=1.2V	PP1V2_OSCAR	12 22
1E87	VOLTAGE=3.0V	PP3V0_MESA_CONN	21
1E88	VOLTAGE=6V	PP6V0_LCM_BOOST	9
1E89	VOLTAGE=5.0V	PP_STRB_DRIVER_TO_LED_WARM	9 16
1E8A	VOLTAGE=5.0V	PP_STRB_DRIVER_TO_LED_COOL	8 16
1E8B	VOLTAGE=1.8V	PP_CODEC_TO_MIC1_BIAS	10 18
1E8C	VOLTAGE=1.8V	PP_EXTMTC_BIAS_FILT_IN	10
1E8D	VOLTAGE=1.8V	PP_EXTMTC_BIAS_FILT	10
1E8E	VOLTAGE=1.8V	PP_CODEC_TO_FRONTMIC3_BIAS	10 11
1E8F	VOLTAGE=1.8V	PP_CODEC_TO_REARMIC2_BIAS	8 10
1E90	VOLTAGE=1.8V	PP_CODEC_FILT+	10
1E91	VOLTAGE=2.2V	PP_CODEC_SPKR_V0	10
1E92	VOLTAGE=2.5V	PP_CODEC_VCPETILT-	10
1E93	VOLTAGE=2.5V	PP_CODEC_VCPETILT+	10
1E94	VOLTAGE=2.5V	PP_CODEC_VHP_ELYN	10
1E95	VOLTAGE=0.2V	PP_CODEC_VHP_ELYX	10
1E96	VOLTAGE=2.5V	PP_CODEC_VHP_ELYP	10
1E97	VOLTAGE=1.8V	PP1V8_ECAM_CONN	11
1E98	VOLTAGE=3.0V	PP2V85_ECAM_AVDD_CONN	11
1E99	VOLTAGE=1.8V	PP_CODEC_TO_FRONTMIC3_BIAS_CONN	11
1E9A	VOLTAGE=3.0V	PP3V0_ALS_CONN	11
1E9B	VOLTAGE=1.2V	PP1V2_ECAM_VDDIO_CONN	11
1E9C	VOLTAGE=5.0V	PP5V0_USB	12 14 17 18 25
1E9D	VOLTAGE=5.0V	PP5V0_USB_TO_PMU	12
1E9E	VOLTAGE=4.6V	PP_BUCK5_LX0	12
1E9F	VOLTAGE=4.6V	PP_BUCK3_LX	12
1EA0	VOLTAGE=4.6V	PP_BUCK4_LX	12
1EA1	VOLTAGE=4.6V	PP_BUCK2_LX	12
1EA2	VOLTAGE=4.6V	PP_BUCK1_LX1	12
1EA3	VOLTAGE=4.6V	PP_BUCK1_LX0	12
1EA4	VOLTAGE=4.6V	PP_BUCK0_LX3	12
1EA5	VOLTAGE=4.6V	PP_BUCK0_LX2	12
1EA6	VOLTAGE=4.6V	PP_BUCK0_LX1	12
1EA7	VOLTAGE=4.6V	PP_BUCK0_LX0	12
1EA8	VOLTAGE=6.0V	PP_CHESTNUT_LXP	15
1EA9	VOLTAGE=6.0V	PP_CHESTNUT_CP	15
1EAB	VOLTAGE=6.0V	PP_CHESTNUT_CN	15
1EAC	VOLTAGE=5.7V	PP5V7_SAGE_AVDDH	15 24
1EAD	VOLTAGE=5.7V	PP5V7_LCM_AVDDH	15 20
1EAE	VOLTAGE=5.1V	PP5V1_GRAPE_VDDH	15 24
1EAF	VOLTAGE=22.0V	PP_WLED_LX	15
1EB0	VOLTAGE=18.0V	PP18V0_MESA_SW	15
1EB1	VOLTAGE=17.0V	PP17V0_MOJAVE_IROUTN	15
1EB2	VOLTAGE=16.5V	PP16V5_MESA	15 21 25
1EB3	VOLTAGE=8.0V	PP_SPKAMP_SW	16
1EB4	VOLTAGE=8.0V	PP_I19_VB00ST	16
1EB5	VOLTAGE=1.8V	PP_SPKAMP_FILT	16
1EB6	VOLTAGE=1.8V	PP_SPKAMP_LDO_FILT	16
1E16	VOLTAGE=5.0V	PP_LED_DRV_LX	16
1E17	VOLTAGE=5.0V	PP_LED_BOOST_OUT	16
1E18	VOLTAGE=2.9V	PP2V9_LDO9	12
1E19	VOLTAGE=1.8V	PP_CODEC_TO_MIC1_BIAS_CONN	18
1E1A	VOLTAGE=4.6V	PP_E75_TO_TRISTAR_ACC2	17 18
1E1B	VOLTAGE=4.6V	PP_E75_TO_TRISTAR_ACC2_CONN	18 25
1E1C	VOLTAGE=1.8V	PP1V8_LCM_CONN	20
1E1D	VOLTAGE=22.0V	PP_LCM_BI_ANODE_CONN	20 25
1E1E	VOLTAGE=-5.7V	PN5V7_LCM_AVDDN_CONN	20
1E1F	VOLTAGE=5.7V	PP5V7_LCM_AVDDH_CONN	20
1E20	VOLTAGE=1.8V	PP1V8_MESA	21
1E21	VOLTAGE=16.5V	PP16V5_MESA_CONN	21
1E22	VOLTAGE=5.0V	PP_TRISTAR_PIN	17
1E23	VOLTAGE=1.2V	PP1V2_RCAM_CONN	23
1E24	VOLTAGE=1.8V	PP1V8_RCAM_CONN	23
1E25	VOLTAGE=3.0V	PP2V85_CAM_VDD	11 23
1E26	VOLTAGE=1.8V	PP2V85_RCAM_AVDD_CONN	23
1E27	VOLTAGE=1.8V	PP_CUMULUS_VDDCORE	24
1E28	VOLTAGE=1.2V	PP_CUMULUS_VDDANA	24
1E29	VOLTAGE=13.5V	PP_SAGE_TO_TOUCH_VCPH_CONN	24
1E2A	VOLTAGE=-12V	PN_SAGE_TO_TOUCH_VCPH_CONN	24
1E2B	VOLTAGE=13.5V	PP_SAGE_TO_TOUCH_VCPH	24
1E2C	VOLTAGE=-12V	PN_SAGE_TO_TOUCH_VCPH	24
1E2D	VOLTAGE=-12V	PN_SAGE_VCPH_F	24
1E2E	VOLTAGE=5.7V	PP_SAGE_LX	24
1E2F	VOLTAGE=17.0V	PP_SAGE_LX	24
1E30	VOLTAGE=1.8V	PP_PMI_VREF	13
1E31	VOLTAGE=14V	PP_SAGE_VBST_OUTH	24
1E32	VOLTAGE=5.0V	PP_TTGRIS_VBUS_DET	14
1E33	VOLTAGE=2.5V	PP_PMI_VDD_REF	13
1E34	VOLTAGE=1.8V	PP_EXTMTC_BIAS	10
1E35	VOLTAGE=1.8V	PP1V8_XTAL	2
1E36	VOLTAGE=1.8V	PP_PMI_VDD_RTC	13
1E37	VOLTAGE=4.6V	PP_BATT_VCC	14 16 25 40 45 46
1E38	VOLTAGE=1.8V	PP1V8_MESA_CONN	21
1E39	VOLTAGE=3.0V	PP3V0_PROX_CONN	11
1E3A	VOLTAGE=1.0V	PP0V95_FIXED_SOC	4 7 12
1E3B	VOLTAGE=1.0V	PP0V95_FIXED_SOC_PCIE	7
1E3C	VOLTAGE=1.2V	PP1V2_PL1	2
1E3D	VOLTAGE=1.0V	PP_BUCK5_LX1	12
1E3E	VOLTAGE=1.0V	PP_VAR_SOC	9 12
1E3F	VOLTAGE=5.0V	PMTD_CAP	14
1E40	VOLTAGE=5.0V	CHARGER_LDO	14
1E41	VOLTAGE=4.6V	CHG_BOOT	14
1E42	VOLTAGE=4.6V	CHG_LX	14
1E43	VOLTAGE=3.0V	VTRF_DRIVE_P	14 18
1E44	VOLTAGE=3.0V	VTRF_DRIVE_N	14 18
1E45	VOLTAGE=1.8V	PP_RCAM_AE_CONN	23
1E46	VOLTAGE=-14.0V	PN_SAGE_VBST_OUTL	24
1E47	VOLTAGE=-12.0V	PN_SAGE_TO_TOUCH_VCPH_FILT	24
1E48	VOLTAGE=2.7V	PP_BB_VDD_2V7_CONN	18

SYSTEM:VOLTAGE PROPERTIES

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SIZE
D

BRANCH

D

C

B

A

D

C

B

A

N61 SPECIFIC

BOOTSTRAPPING (BOARD_REV, BOARD_ID, BOOT_CFG)

BOARD_REV[3:0]={GPIO34, GPIO35, GPIO36, GPIO37}
FLOAT=LOW, PULLUP=HIGH

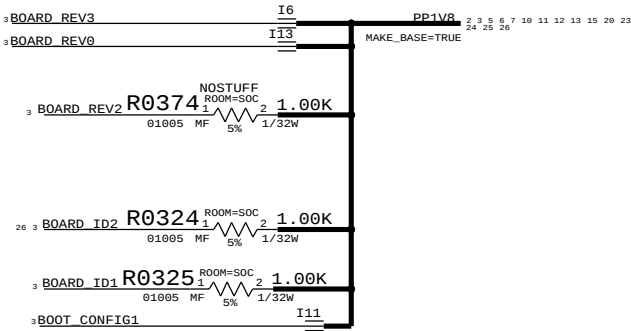
1111 PROTOMLB1
1110 PROTOMLB2
1101 PROTO1
1100 PROTO2
1011 EVT
1010 EVT SPLIT CARBON DOE
1001 CARRIER BUILD <--- SELECTED
1000 DVT

BOARD_ID[4:0]={GPIO29, GPIO16, SPI00_MISO, SPI0_MOSI, SPI0_SCLK}

FLOAT=LOW, PULLUP=HIGH
00100 N56, T133 MLB
00101 N56 DEV
00110 FIJI N61 MLB <--- SELECTED

BOOT_CONFIG[2:0]={GPIO28, GPIO25, GPIO18}

FLOAT=LOW, PULLUP=HIGH
000 SPI0
001 SPI0 TEST MODE
010 NAND <--- SELECTED
011 NAND TEST MODE
100 NVME
101 NVME TEST MODE
111 FAST SPI



PAGE TITLE		SYSTEM:N61 SPECIFIC	
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		BRANCH	
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RADIO_MLB HIERARCHICAL SYMBOL

POWER

VCC_MAIN, VBAT GOES TO RADIO_MLB DIRECTLY
CHECK ALL PAGES IN RF SIDE!

POWER



CELLULAR HOUSE KEEPING

3	AP_TO_RADIO_ON_L	MAKE_BASE=TRUE	I325	RADIO_ON_L	30 32
3	BB_TO_AP_RESET_DET_L	MAKE_BASE=TRUE	I324	BB_RESET_DET_L	30 35
13	PMU_TO_BB_RST_L	MAKE_BASE=TRUE	I326	RF_PMIC_RESET_L	30 32
3	AP_TO_BB_RST_L	MAKE_BASE=TRUE	I327	BB_RST_L	30 32
3	AP_TO_BB_WAKE_MODEM	MAKE_BASE=TRUE	I329	AP_WAKE_MODEM	35
13	BB_TO_PMU_HOST_WAKE_L	MAKE_BASE=TRUE	I328	BB_WAKE_HOST_L	30 35
13	BB_TO_AP_IPC_GPIO	MAKE_BASE=TRUE	I331	BB_IPC_GPIO	35
16	BB_TO_LEDDRVR_GSM_BLANK	MAKE_BASE=TRUE	I330	GSM_TXBURST_IND	35
3	BB_TO_AP_GPS_SYNC	MAKE_BASE=TRUE	I332	BB_GPS_SYNC	30 35

WLAN/BT HOUSE KEEPING

13	45_PMU_TO_WLAN_CLK32K	MAKE_BASE=TRUE	I316	CLK32K_AP	30 51
13	PMU_TO_WLAN_REG_ON	MAKE_BASE=TRUE	I317	WLAN_REG_ON	30 51
13	WLAN_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	I318	HOST_WAKE_WLAN	30 51
13	PMU_TO_BT_REG_ON	MAKE_BASE=TRUE	I319	BT_REG_ON	30 51
3	AP_TO_BT_WAKE	MAKE_BASE=TRUE	I320	WAKE_BT	30 51
13	BT_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	I321	HOST_WAKE_BT	51

HSIC IPC

2	50_AP_BT_BB_HSIC1_DATA	MAKE_BASE=TRUE	I368	50_BB_HSIC_DATA	30 34
2	50_AP_BT_BB_HSIC1_STB	MAKE_BASE=TRUE	I369	50_BB_HSIC_STROBE	30 34
3	AP_TO_BB_HOST_RDY	MAKE_BASE=TRUE	I371	BB_HOST_RDY	30 35
3	BB_TO_AP_DEVICE_RDY	MAKE_BASE=TRUE	I370	BB_DEVICE_RDY	30 35
3	BB_TO_AP_IPC_GPIO1	MAKE_BASE=TRUE	I372	BB_IPC_GPIO1	35

UART IPC

3	AP_TO_BB_UART2_RTS_L	MAKE_BASE=TRUE	I373	BB_UART_CTS_L	30 35
3	BB_TO_AP_UART2_CTS_L	MAKE_BASE=TRUE	I376	BB_UART_RTS_L	30 35
17 3	AP_TO_BB_UART2_TXD	MAKE_BASE=TRUE	I374	BB_UART_RXD	30 35
17 3	BB_TO_AP_UART2_RXD	MAKE_BASE=TRUE	I375	BB_UART_TXD	30 35

AUDIO I2S

3	45_AP_TO_BB_I2S3_BCLK	MAKE_BASE=TRUE	I377	BB_I2S_CLK	35
3	AP_TO_BB_I2S3_DOUT	MAKE_BASE=TRUE	I378	BB_I2S_RXD	30 35
3	BB_TO_AP_I2S3_DIN	MAKE_BASE=TRUE	I379	BB_I2S_TXD	30 35
3	AP_TO_BB_I2S3_LRCLK	MAKE_BASE=TRUE	I380	BB_I2S_WS	30 35

OSCAR UART

22	OSCAR_TO_BB_UART_TXD	MAKE_BASE=TRUE	I382	BB_OTHER_RXD	30 35
22	BB_TO_OSCAR_UART_RXD	MAKE_BASE=TRUE	I381	BB_OTHER_TXD	30 35

BB DEBUG INTERFACES

3	AP_TO_BB_COREDUMP	MAKE_BASE=TRUE	I384	BB_CORE_DUMP	30 35
13	PMU_TO_BB_VBUS_DET	MAKE_BASE=TRUE	I387	BB_USB_VBUS	30 34
17	90_TRISTAR_BT_BB_USB_N	MAKE_BASE=TRUE	I386	90_BB_USB_N	30 34
17	90_TRISTAR_BT_BB_USB_P	MAKE_BASE=TRUE	I388	90_BB_USB_P	30 34

RADIO ANTENNA CONTROL

18	PP_BB_VDD_2V7	MAKE_BASE=TRUE	I389	PP_LD014_RFSW	31 41 42
18	BB_GPIO0	MAKE_BASE=TRUE	I390	BB_LAT_GPIO0	35
18	BB_GPIO2	MAKE_BASE=TRUE	I391	BB_LAT_GPIO2	35
18	BB_GPIO3	MAKE_BASE=TRUE	I392	BB_LAT_GPIO3	35
18	BB_GPIO4	MAKE_BASE=TRUE	I394	BB_LAT_GPIO4	35

FCT TESTING

13	RADIO_TO_PMU_ADC_SMPS1	MAKE_BASE=TRUE	I395	ADC_SMPS1	30
13	RADIO_TO_PMU_ADC_PP_LD011_VDDIO	MAKE_BASE=TRUE	I396	ADC_PP_LD011	30
13	RADIO_TO_PMU_ADC_PP_LD05_SIM	MAKE_BASE=TRUE	I398	ADC_PP_LD05	30
13	RADIO_TO_PMU_ADC_SMPS4	MAKE_BASE=TRUE	I397	ADC_SMPS4	30

UPPER RADIO ANTENNA CONTROL

25	50_AP_WIFI_5G_CONN_ANT	MAKE_BASE=TRUE	I410	50_WIFI_5G_CONN_ANT	50
25	50_AP_UAT_FEED	MAKE_BASE=TRUE	I409	50_UPPER_ANT_FEED	50
13	UAT_ANT_GND	MAKE_BASE=TRUE	I411	ANT_GND	50
20 26 17 15 12	PP3V0_TRISTAR	MAKE_BASE=TRUE	I404	PAC_VDD_3V0	53
25 8	NORTH_AC_GND_SCREW	MAKE_BASE=TRUE	I412	NORTH_ANT_GND	50

WLAN HSIC IPC

3	WLAN_TO_AP_UART4_RXD	MAKE_BASE=TRUE	I345	WLAN_UART_TXD	30 51
3	AP_TO_WLAN_UART4_TXD	MAKE_BASE=TRUE	I348	WLAN_UART_RXD	30 51
3	WLAN_TO_AP_UART4_CTS_L	MAKE_BASE=TRUE	I347	WLAN_UART_RTS_L	30 51
3	AP_TO_WLAN_UART4_RTS_L	MAKE_BASE=TRUE	I346	WLAN_UART_CTS_L	30 51

BT UART IPC

3	AP_TO_BT_UART1_RTS_L	MAKE_BASE=TRUE	I349	BT_UART_CTS_L	51
3	BT_TO_AP_UART1_CTS_L	MAKE_BASE=TRUE	I352	BT_UART_RTS_L	51
3	AP_TO_BT_UART1_TXD	MAKE_BASE=TRUE	I351	BT_UART_RXD	30 51
3	BT_TO_AP_UART1_RXD	MAKE_BASE=TRUE	I350	BT_UART_TXD	30 51

BT AUDIO PCM

3	45_AP_TO_BT_I2S1_BCLK	MAKE_BASE=TRUE	I354	BT_PCM_CLK	51
3	AP_TO_BT_I2S1_DOUT	MAKE_BASE=TRUE	I353	BT_PCM_IN	51
3	BT_TO_AP_I2S1_DIN	MAKE_BASE=TRUE	I355	BT_PCM_OUT	51
3	AP_TO_BT_I2S1_LRCLK	MAKE_BASE=TRUE	I356	BT_PCM_SYNC	51

OSCAR STATES

22	OSCAR_TO_RADIO_CONTEXT_A	MAKE_BASE=TRUE	I358	OSCAR_CONTEXT_A	51
22	OSCAR_TO_RADIO_CONTEXT_B	MAKE_BASE=TRUE	I357	OSCAR_CONTEXT_B	51

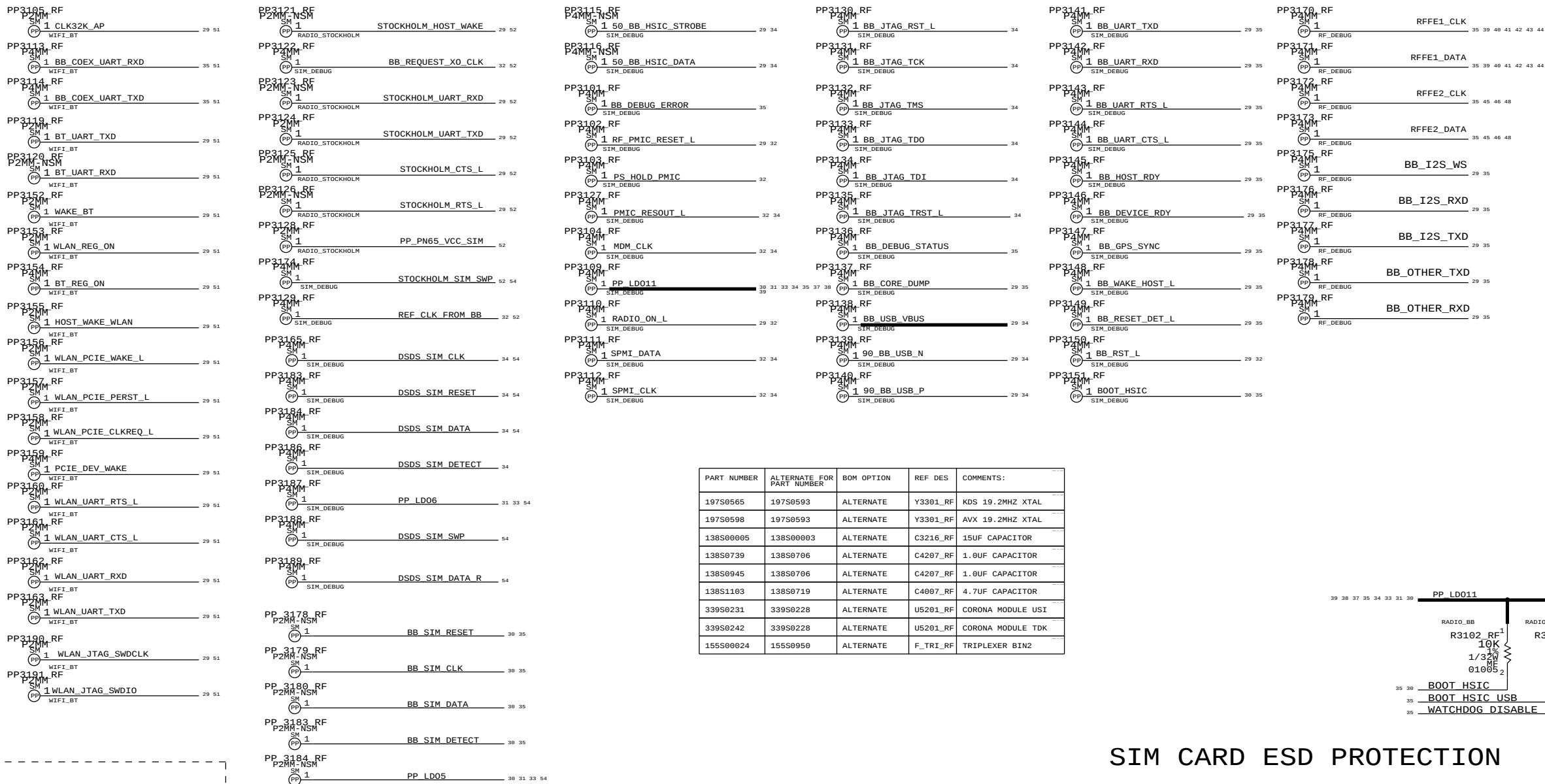
STOCKHOLM

3	STOCKHOLM_TO_AP_UART3_CTS_L	MAKE_BASE=TRUE	I359	STOCKHOLM_RTS_L	30 52
3	AP_TO_STOCKHOLM_UART3_RTS_L	MAKE_BASE=TRUE	I360	STOCKHOLM_CTS_L	30 52
3	STOCKHOLM_TO_AP_UART3_RXD	MAKE_BASE=TRUE	I361	STOCKHOLM_UART_TXD	30 52
3	AP_TO_STOCKHOLM_UART3_TXD	MAKE_BASE=TRUE	I363	STOCKHOLM_UART_RXD	30 52
3	AP_TO_STOCKHOLM_DWLD_REQ	MAKE_BASE=TRUE	I362	STOCKHOLM_FW_DWLD_REQ	52
13	STOCKHOLM_TO_PMU_HOST_WAKE	MAKE_BASE=TRUE	I364	STOCKHOLM_HOST_WAKE	30 52
7	AP_TO_STOCKHOLM_EN	MAKE_BASE=TRUE	I365	STOCKHOLM_ENABLE	52
29 26 17 15 12	PP3V0_TRISTAR	MAKE_BASE=TRUE	I366	STOCKHOLM_VDD_MUX_3V0	54
3	AP_TO_STOCKHOLM_SIM_SEL	MAKE_BASE=TRUE	I367	STOCKHOLM_SIM_SEL	54
25	AP_TO_STOCKHOLM_ANT	MAKE_BASE=TRUE	I486	STOCKHOLM_ANT	52

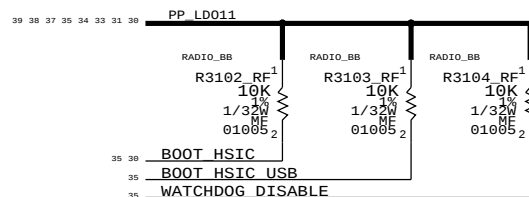
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AP INTERFACE & DEBUG CONNECTORS

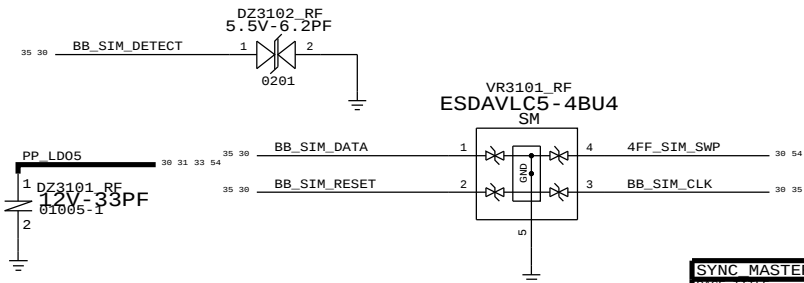
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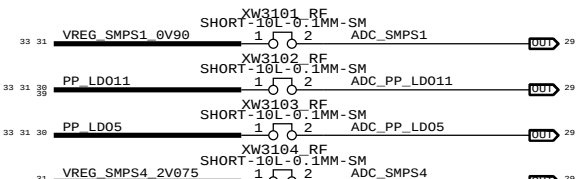
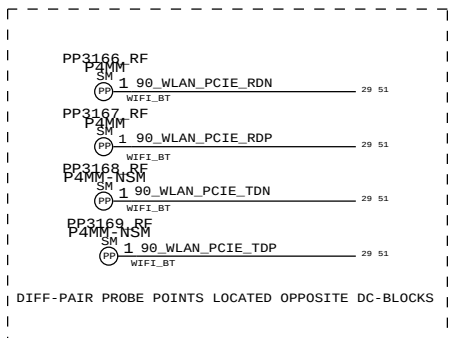
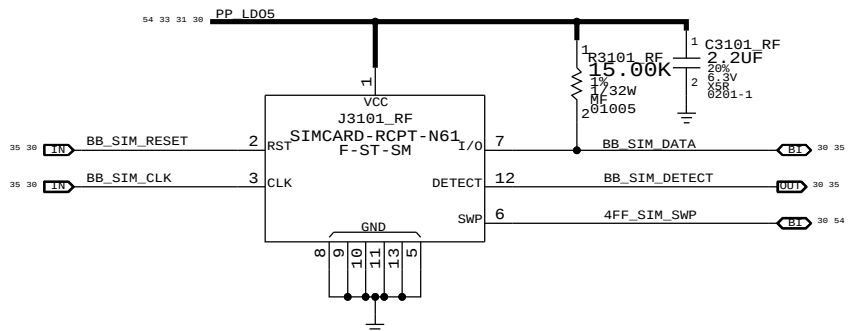
PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
197S0565	197S0593	ALTERNATE	Y3301_RF	KDS 19.2MHZ XTAL
197S0598	197S0593	ALTERNATE	Y3301_RF	AVX 19.2MHZ XTAL
138S00005	138S00003	ALTERNATE	C3216_RF	150F CAPACITOR
138S0739	138S0706	ALTERNATE	C4207_RF	1.00UF CAPACITOR
138S0945	138S0706	ALTERNATE	C4207_RF	1.0UF CAPACITOR
138S1103	138S0719	ALTERNATE	C4007_RF	4.7UF CAPACITOR
339S0231	339S0228	ALTERNATE	U5201_RF	CORONA MODULE USI
339S0242	339S0228	ALTERNATE	U5201_RF	CORONA MODULE TDK
155S00024	155S0950	ALTERNATE	F_TRI_RF	TRIPLEXER BIN2



SIM CARD ESD PROTECTION

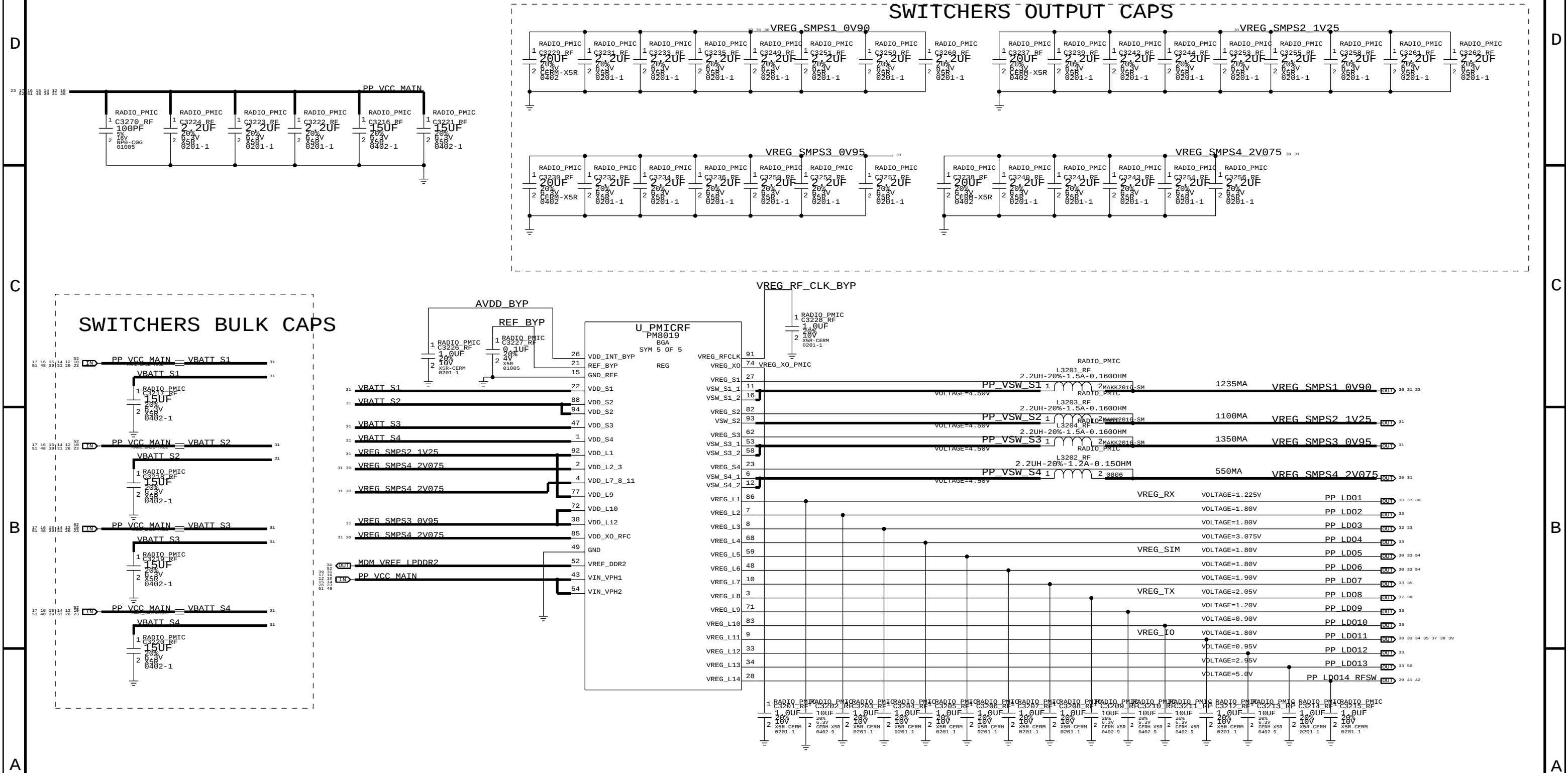


SIM CARD CONNECTOR



BASEBAND PMU (1 OF 2)

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BASEBAND PMU (1 OF 2)

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BASEBAND PMU (2 OF 2)

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C401
R411
L400
U404

BOARD_1	REVISION	
00000000	00000000	00000000

0.00V	N61	PROTO_MLB1
0.50V	N61	DEV3
0.70V	N61	DEV4
0.90V	N61	PROTO_MLB2
1.10V	N61/N56	PROTO1
1.30V	N61/N56	PROTO2
1.40V	N61/N56	EVT1
1.50V	N61/N56	EVT2 (CARRIER)
1.60V	N61/N56	DVT
1.70V	N61/N56	PVT

XTAL19M_IN 32

1 RADIO_MIC

23304 PF

100K

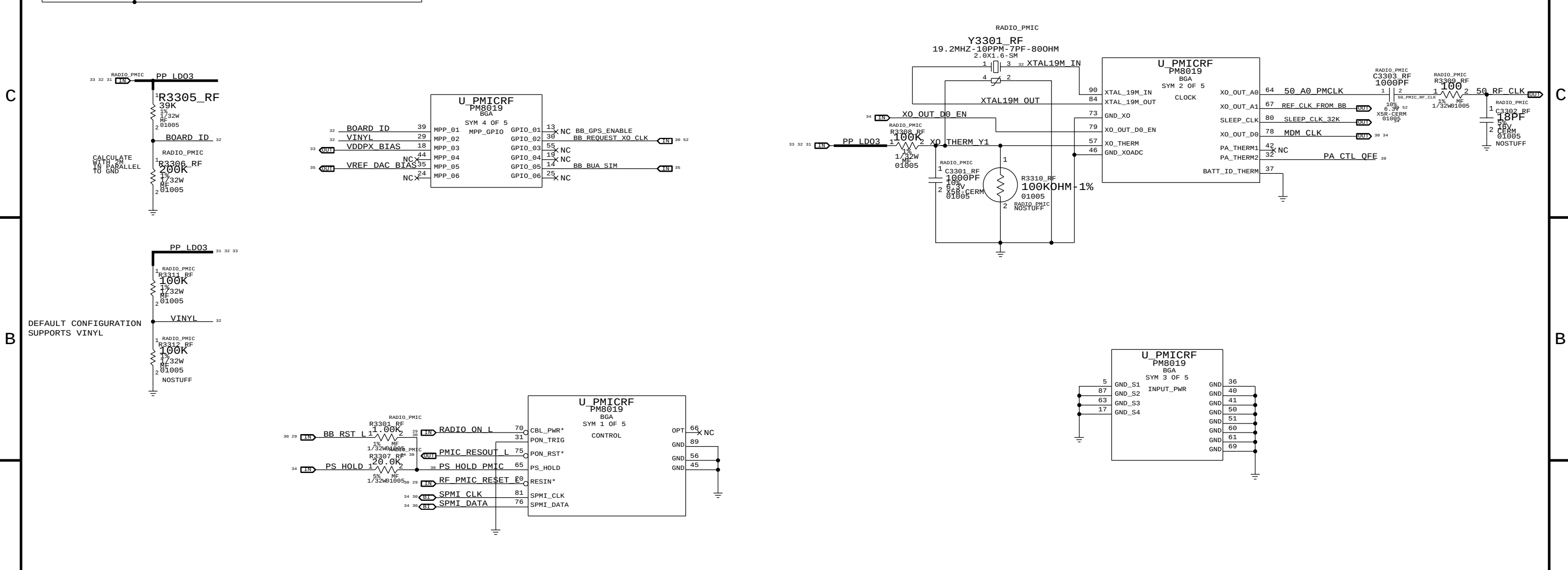
17

17 32W

0 1005

28

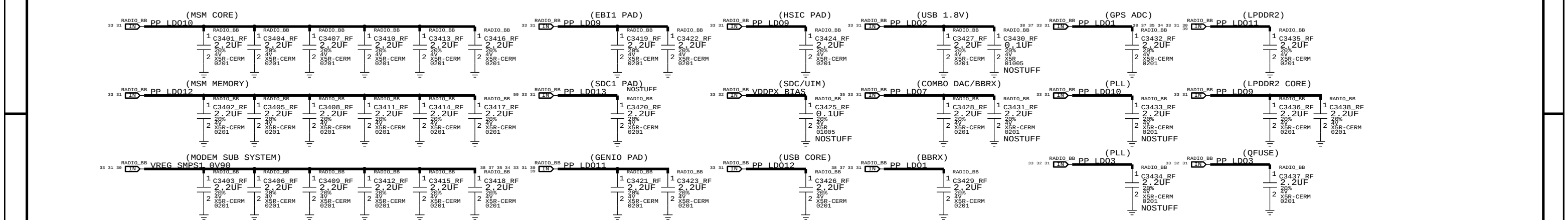
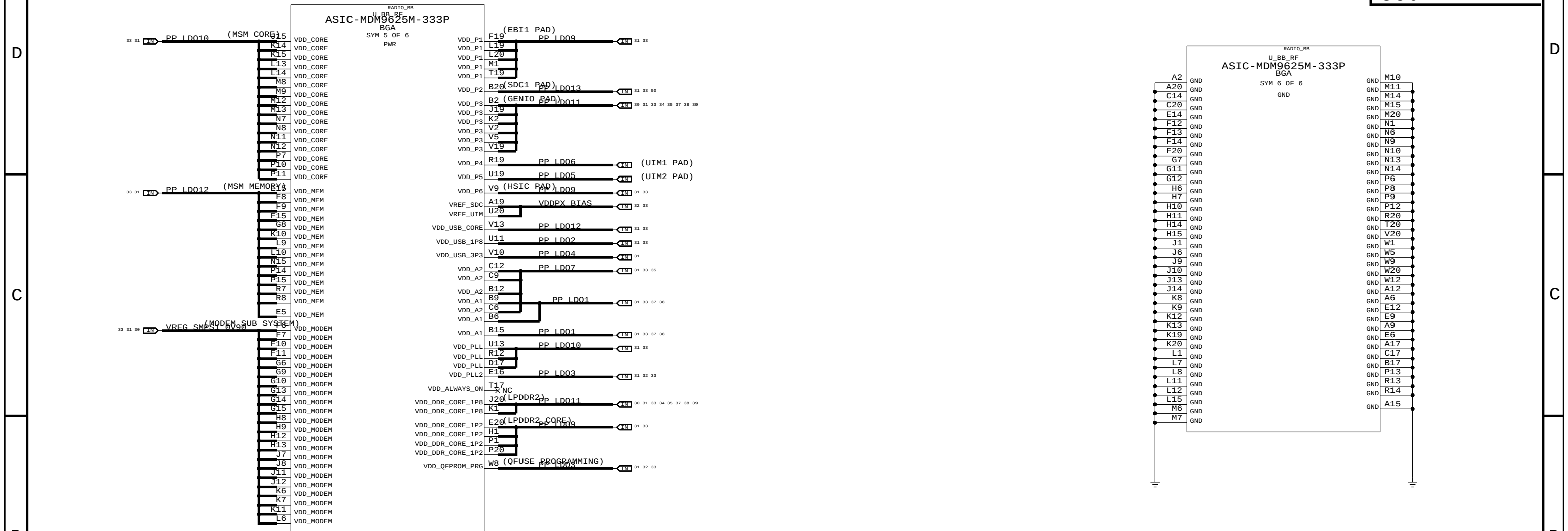
NOSTUFF



BASEBAND (1 OF 3)

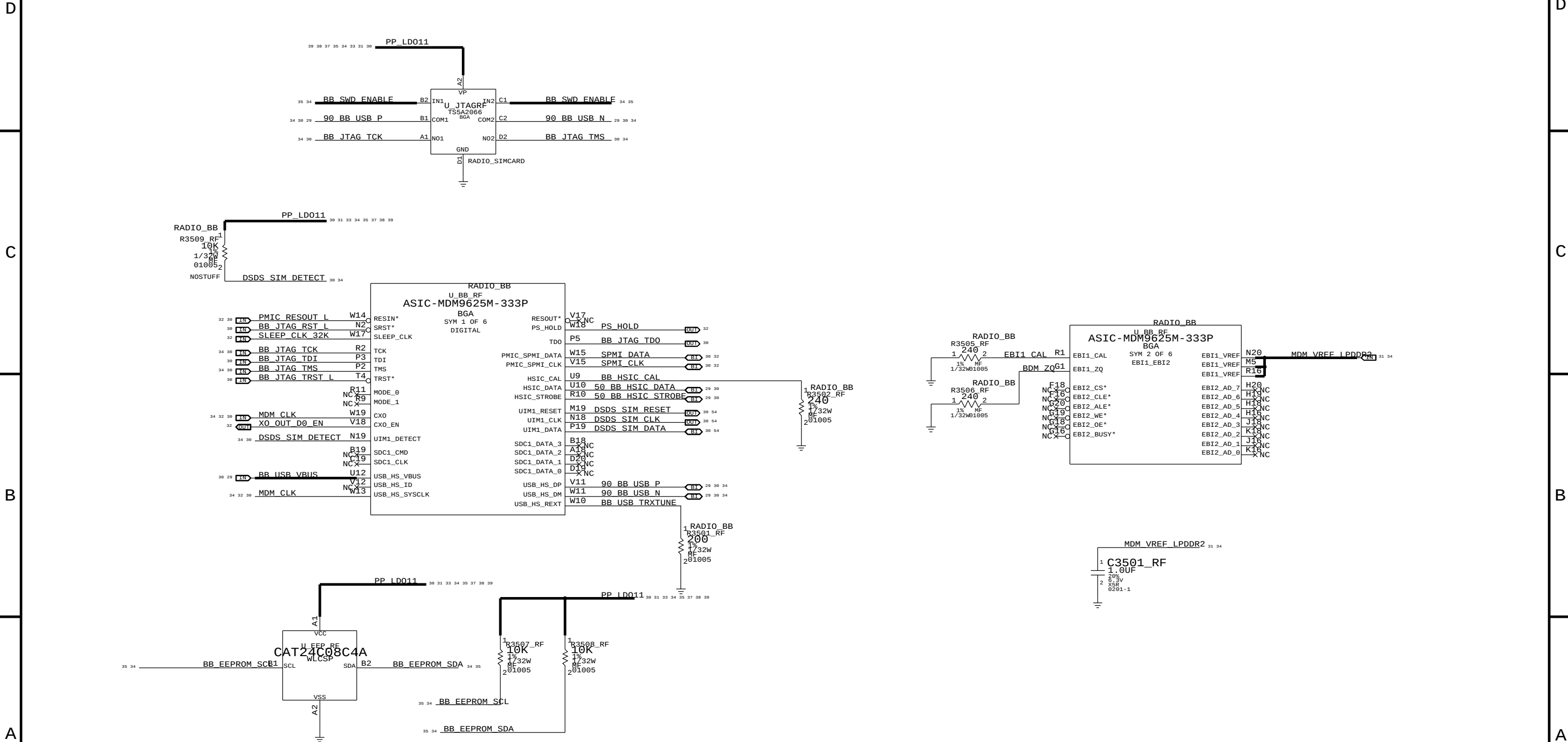
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C538
R500
L500
U502

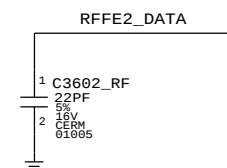
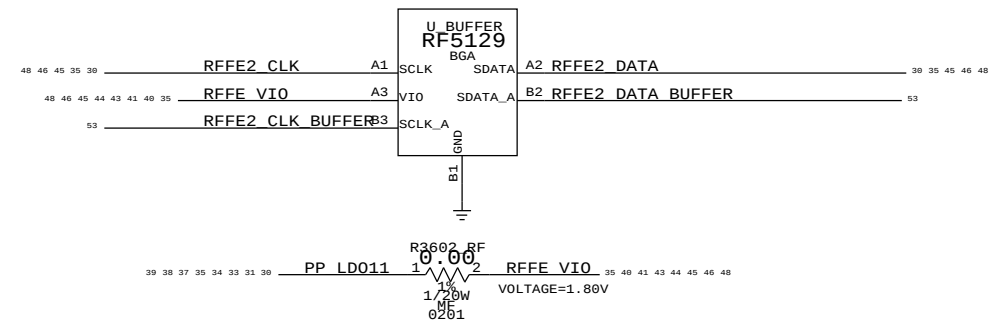
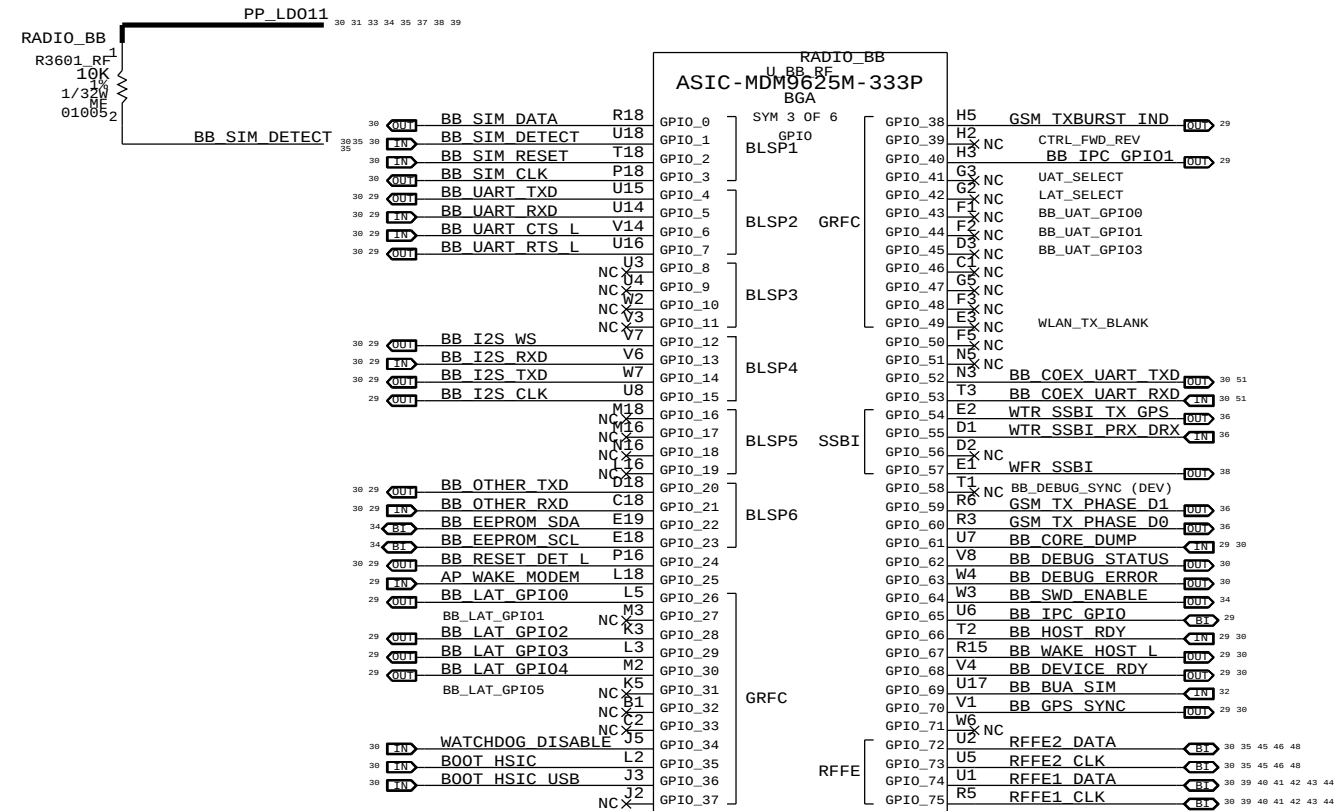


BASEBAND (2 OF 3) CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSES ONLY - NOT A CHANGE REQUEST.	C600
	R606
	L600
	U602

[illegible]



C704
R700
L700
U702



WTR TRANSCEIVER (1 OF 2)

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C802
R802
L800
U803

D

D

C

C

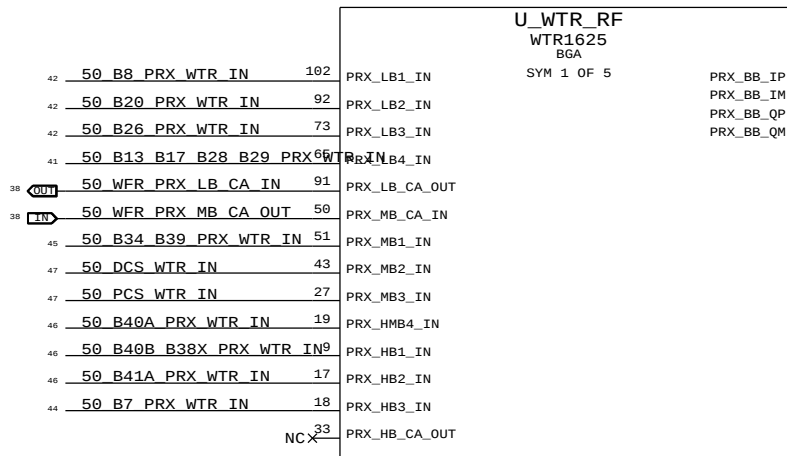
B

B

A

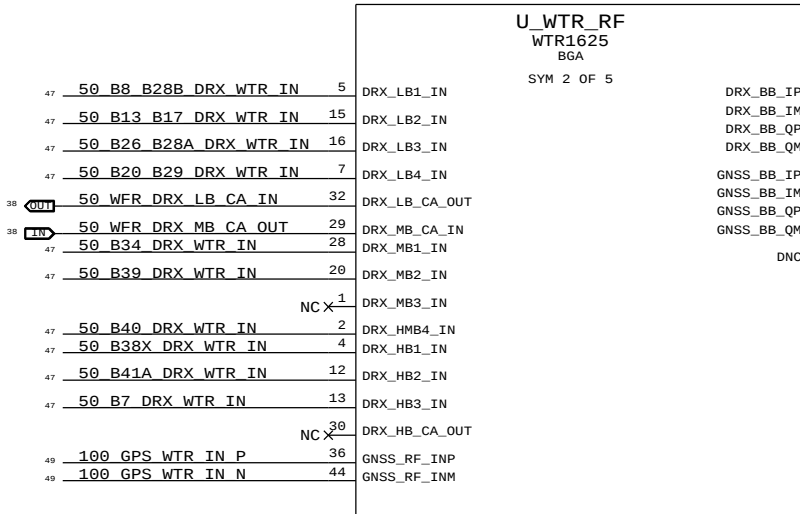
A

LB1	DC
LB2	DC
LB3	DC
LB4	DC
MB1	NO DC
MB2	DC
MB3	DC
HB1	NO DC
HB2	DC
HB3	DC
HBMB4	NO DC

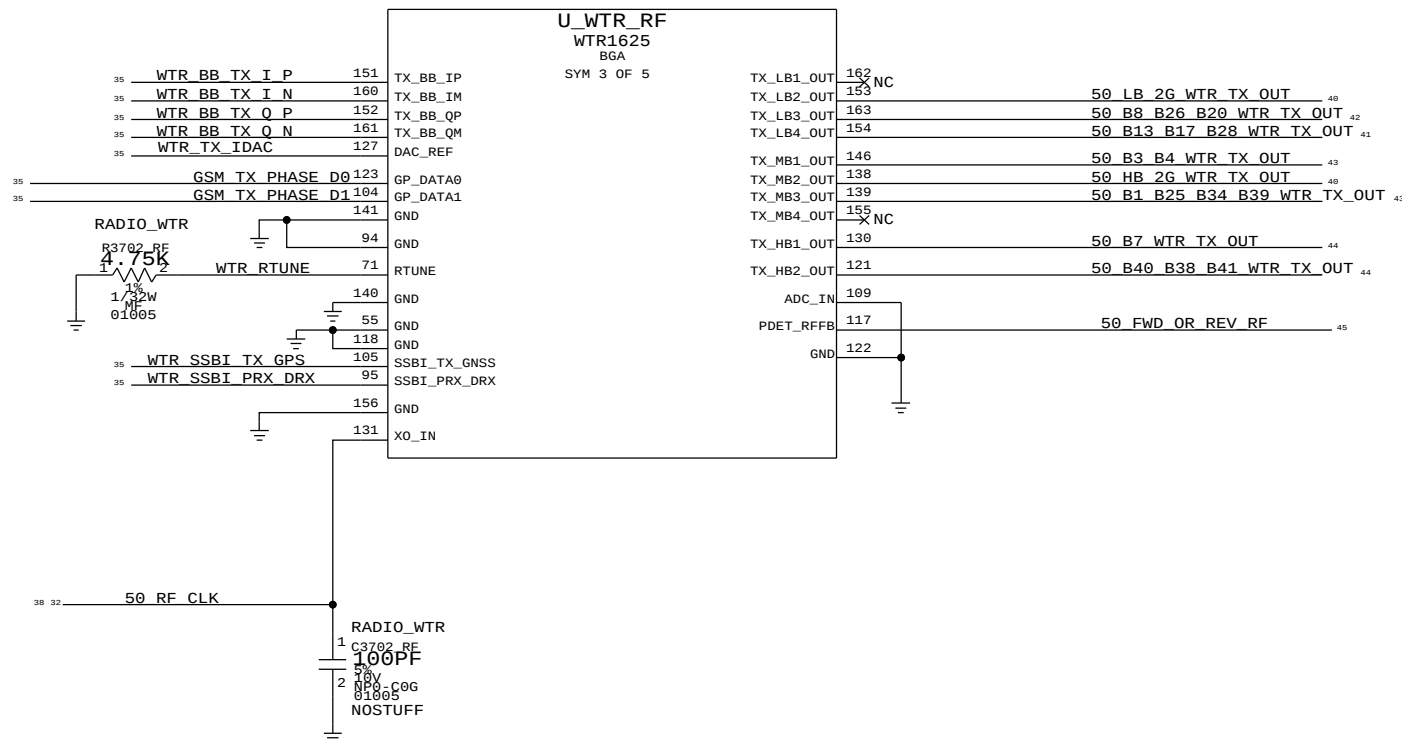


99	WTR_BB_PRX_I_P	35	OUT
108	WTR_BB_PRX_I_N	35	OUT
107	WTR_BB_PRX_Q_P	35	OUT
97	WTR_BB_PRX_Q_N	35	OUT

LB1	DC
LB2	DC
LB3	DC
LB4	DC
MB1	NO DC
MB2	DC
MB3	DC
HB1	NO DC
HB2	DC
HB3	DC
HBMB4	NO DC



76	WTR_BB_DRX_I_P	35	OUT	RADIO_WTR
86	WTR_BB_DRX_I_N	35	OUT	RADIO_WTR
61	WTR_BB_DRX_Q_P	35	OUT	RADIO_WTR
68	WTR_BB_DRX_Q_N	35	OUT	RADIO_WTR
60	WTR_BB_GPS_I_P	35	OUT	RADIO_WTR
53	WTR_BB_GPS_I_N	35	OUT	RADIO_WTR
67	WTR_BB_GPS_Q_P	35	OUT	RADIO_WTR
85	WTR_BB_GPS_Q_N	35	OUT	RADIO_WTR
37				NC



RF_CLK IS SHARED BETWEEN WTR AND WFR. LENGTH DIFFERENCE BETWEEN THE TWO SHOULD BE < 5MM.

PAGE TITLE

RF TRANSCEIVER (1 OF 3)

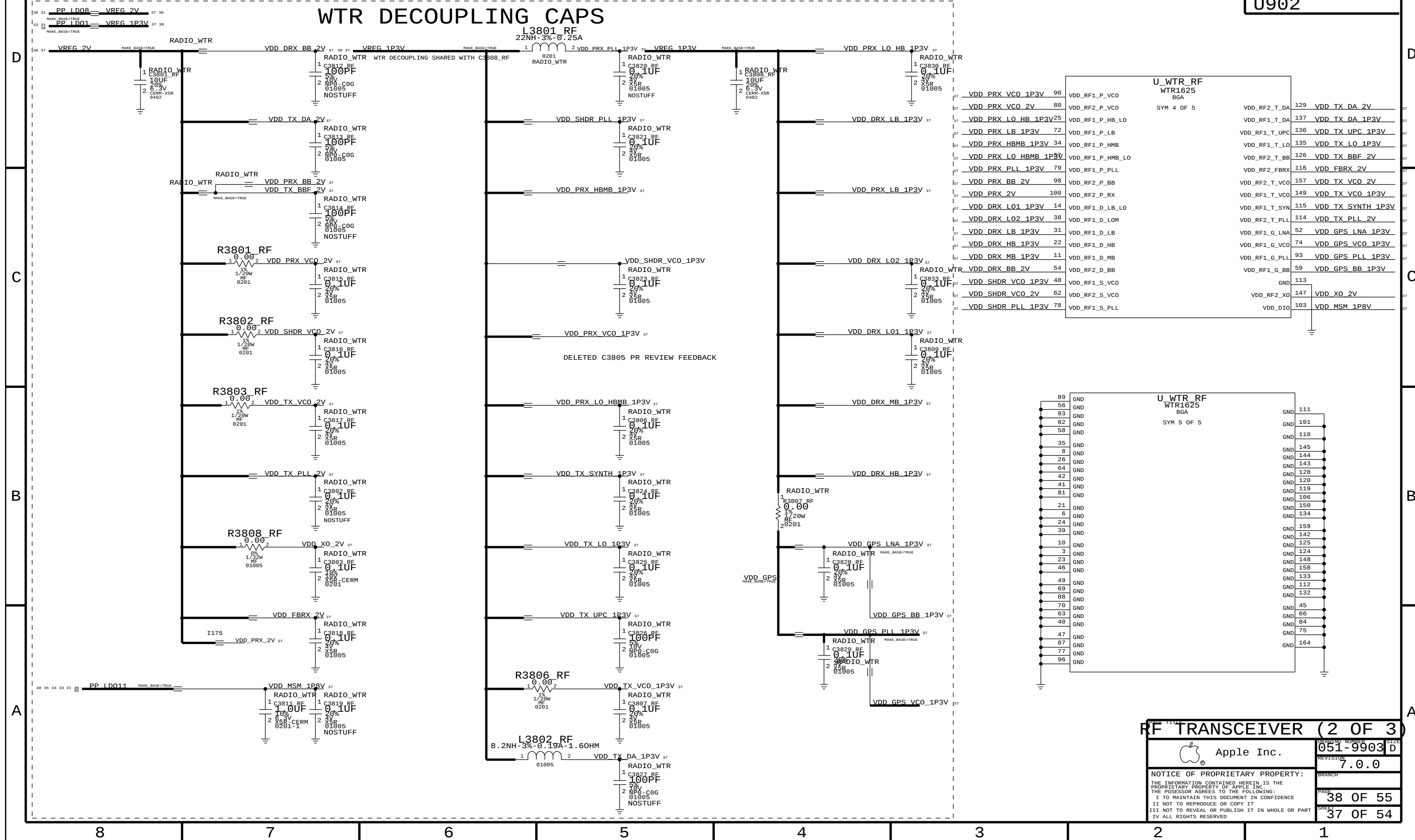
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WTR TRANSCEIVER (2 OF 2)

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C934
R926
L3802_RF
U902

WTR DECOUPLING CAPS



PAGE TITLE
RF TRANSCEIVER (2 OF 3)



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051 0003	D

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13:24N

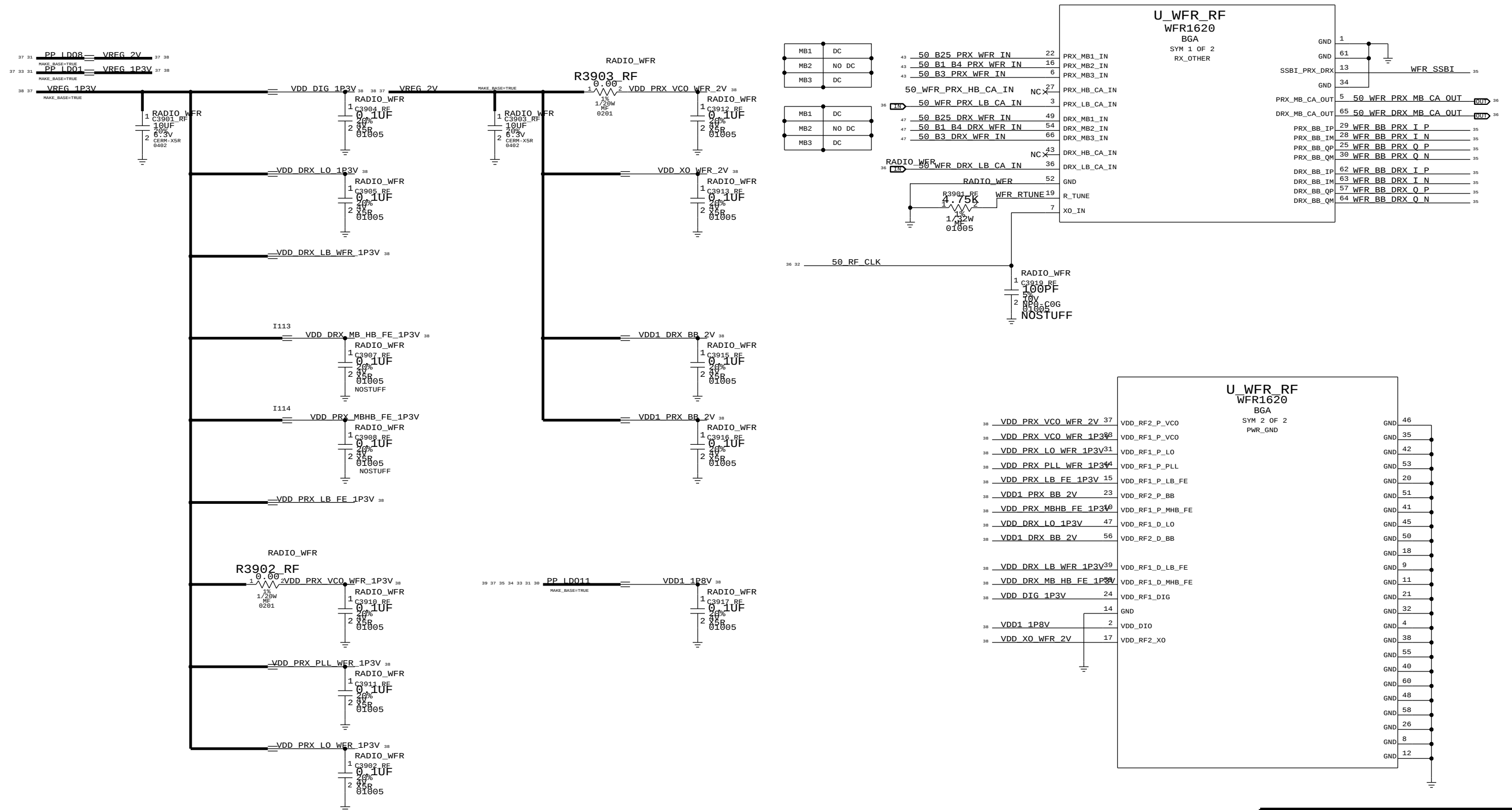
PAGE 38 OF 55

SHEET 37 OF 54

WFR TRANSCEIVER

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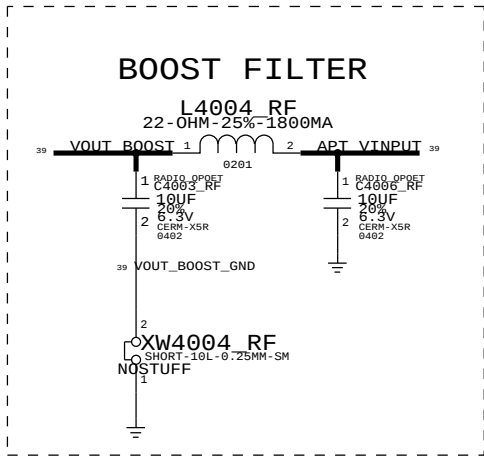
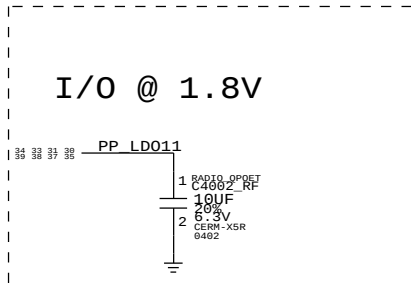
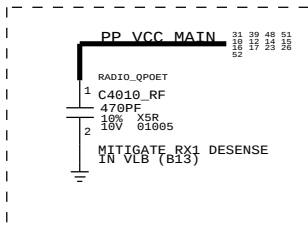
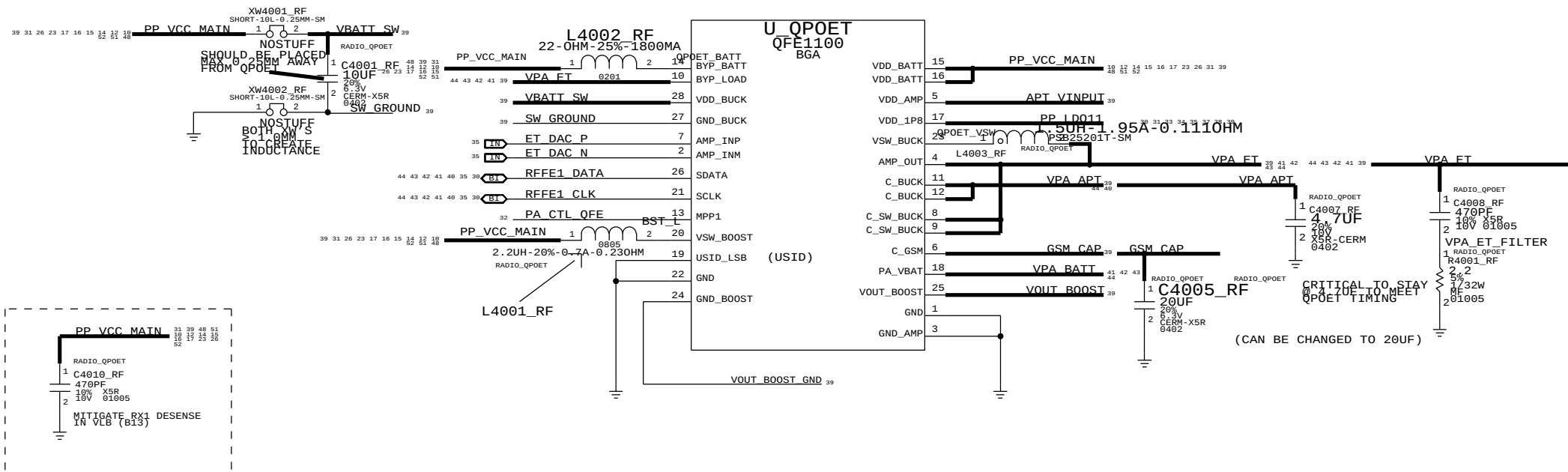
C1019
R1016
L1000
U1002



QFE DCDC

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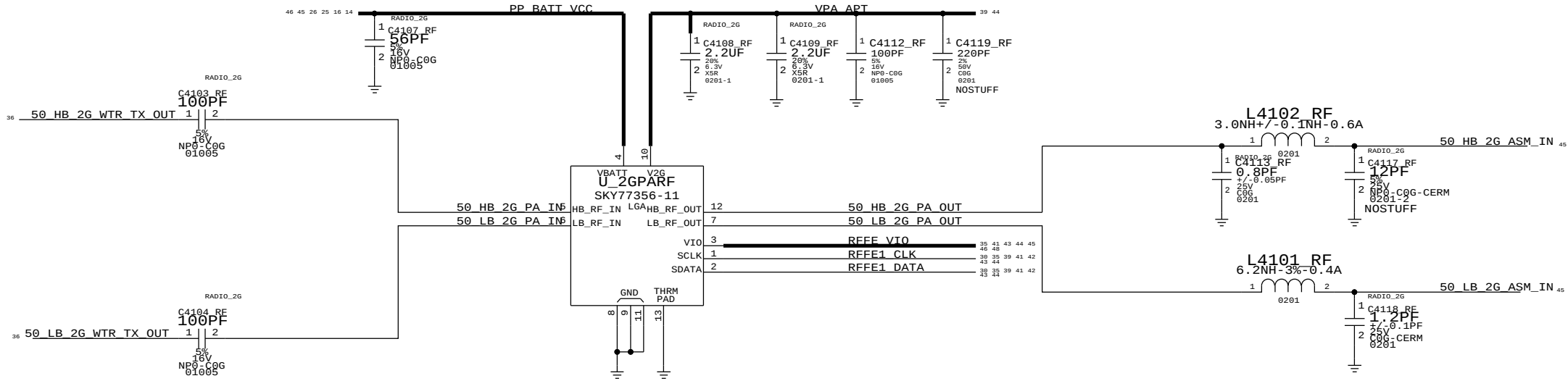
C1110
R1102
L1104
U1101



2G PA

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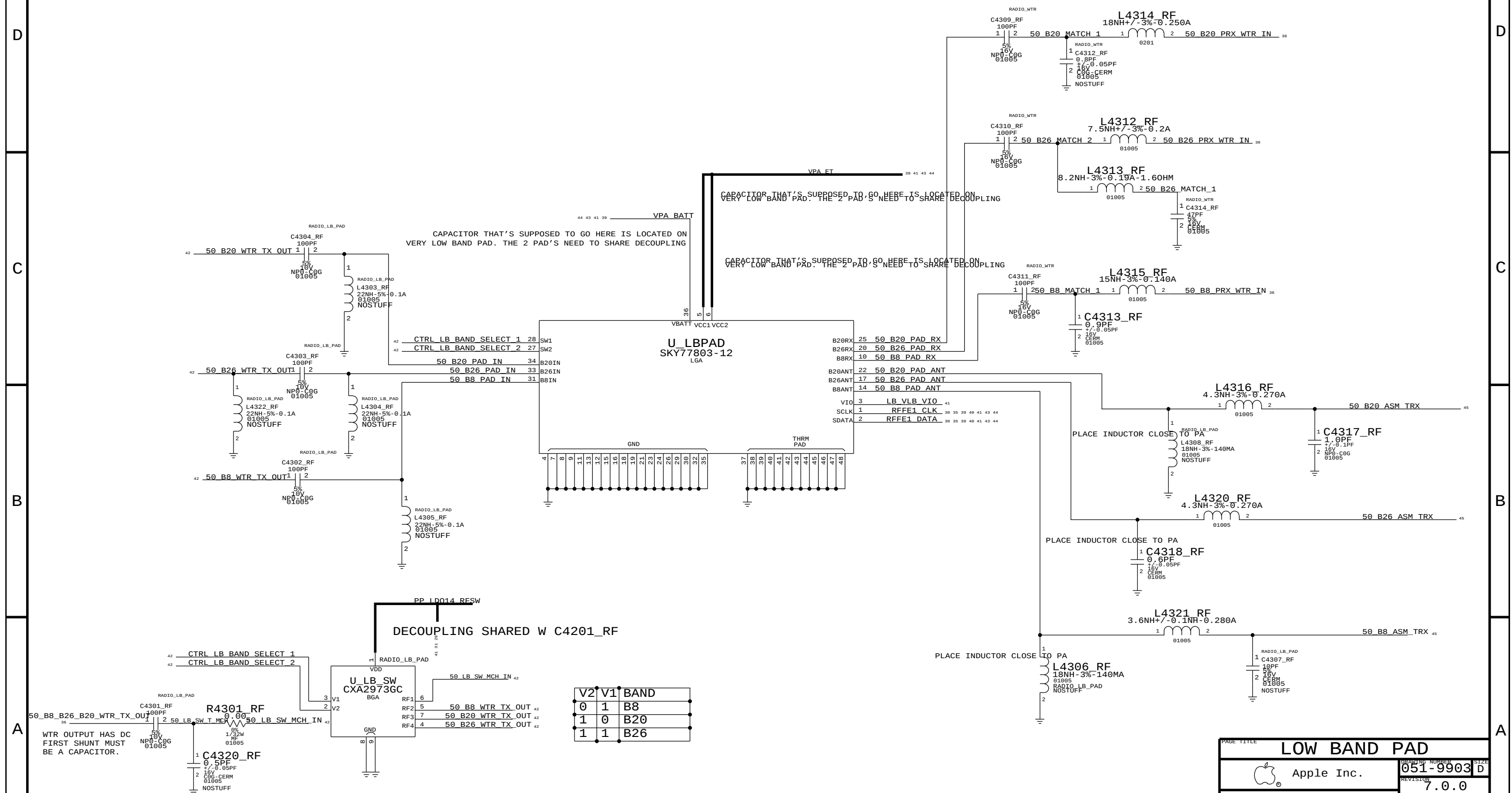
C1208
R1200
L1204
U1201



LOW BAND PAD (B8, B26, B20)

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C4318_RF
R1400
L4322_RF
U1402

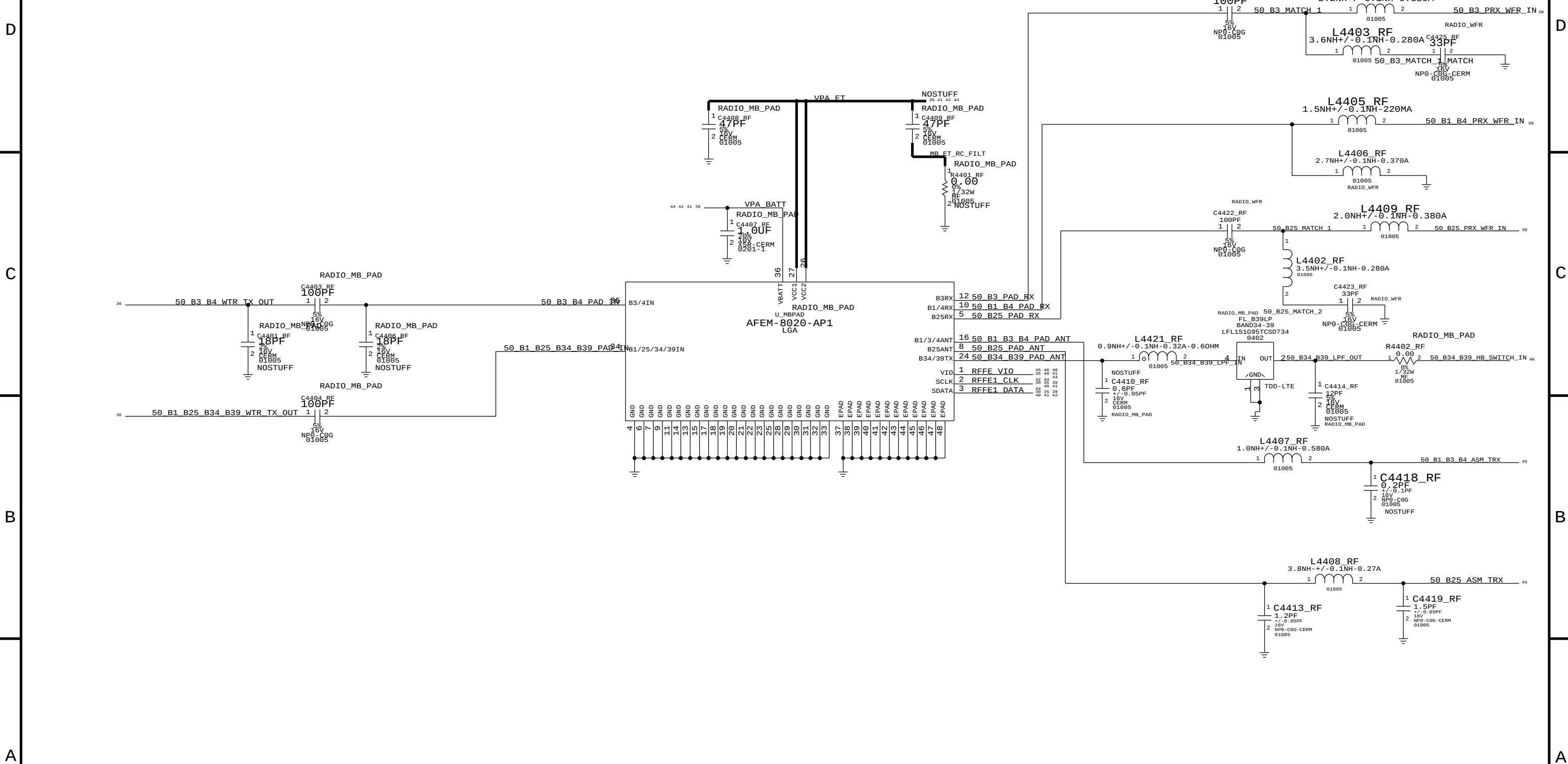


V2	V1	BAND
0	1	B8
1	0	B20
1	1	B26

PAGE TITLE	LOW BAND PAD		DRAWING NUMBER	051-9903	SHEET	D
	Apple Inc.		REVISION	7.0.0		
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			PAGE	43 OF 55		
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MID BAND PAD (B1, B25, B3, B4, B34, B39) CONFIDENTIAL AND PROPRIETARY APPLE SYSTEM DESIGN. FOR REFERENCE PURPOSES ONLY - NOT A CHANGE REQUEST.	C4426 RF
	R1500
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	U1501

RADIO_WFR		L4404 RF	
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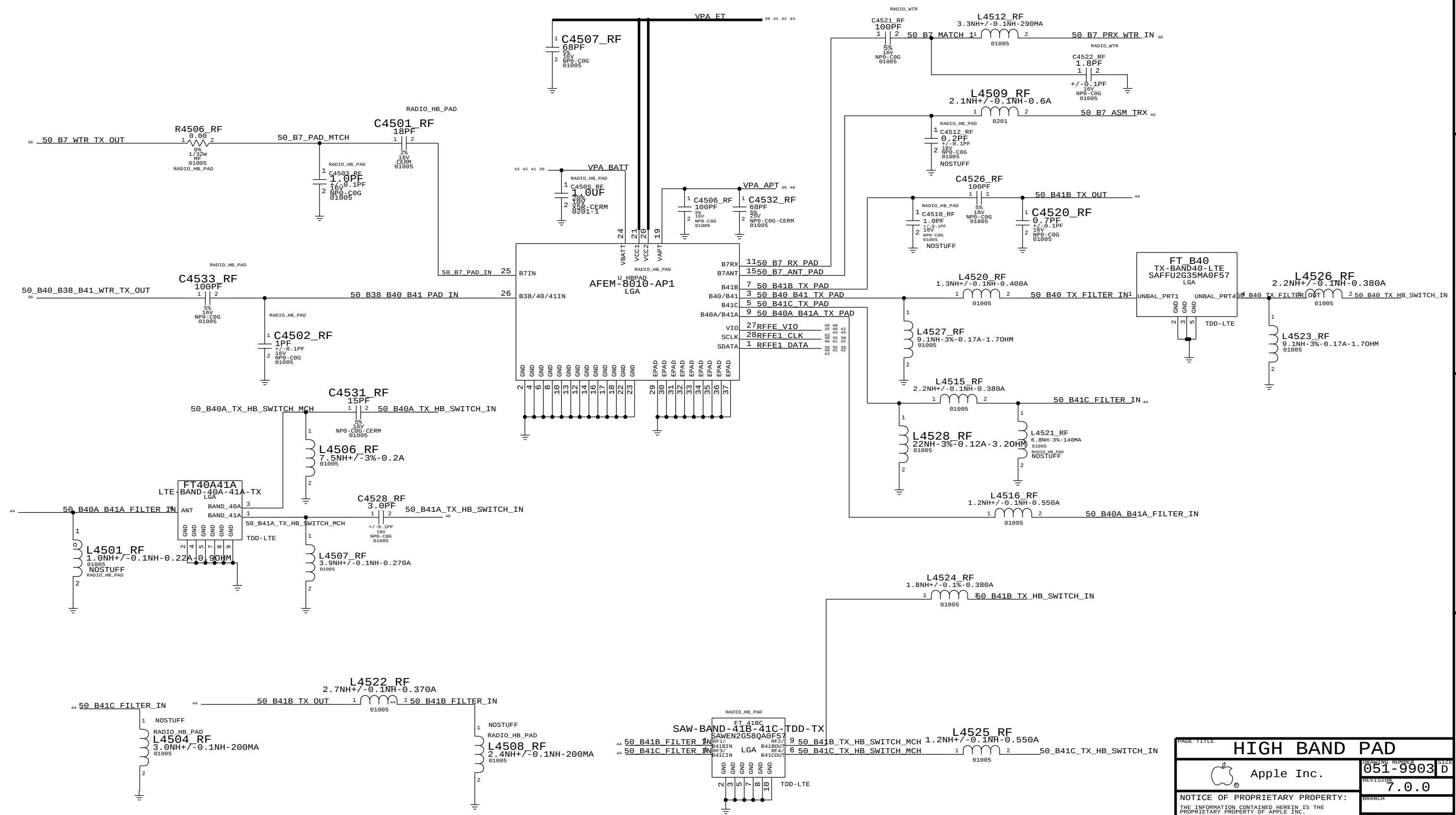
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			44 OF 55		
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HIGH BAND PAD (B7, B38, B40, B41, XGP)

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C4533_RF
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U1601

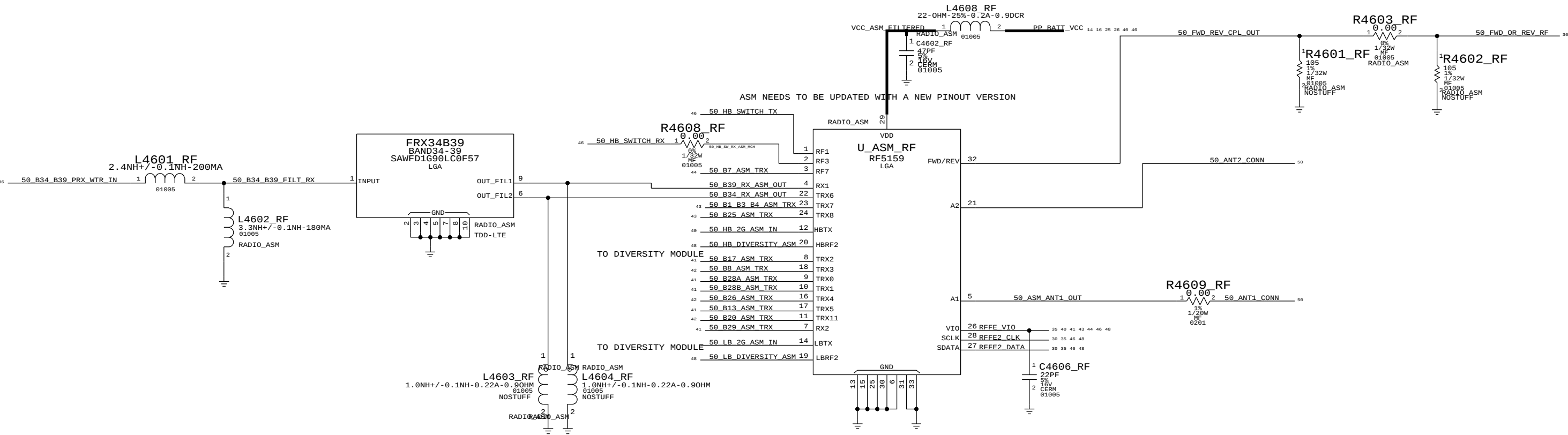


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ANTENNA SWITCH

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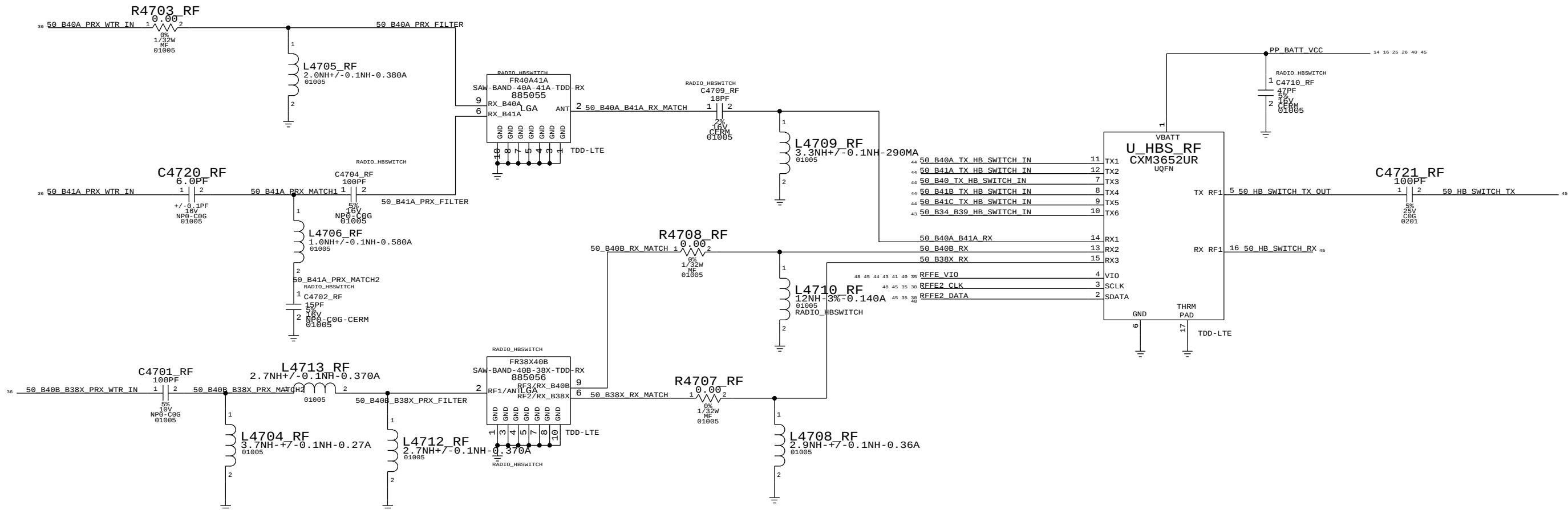
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HIGH BAND SWITCH

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RX DIVERSITY (1)

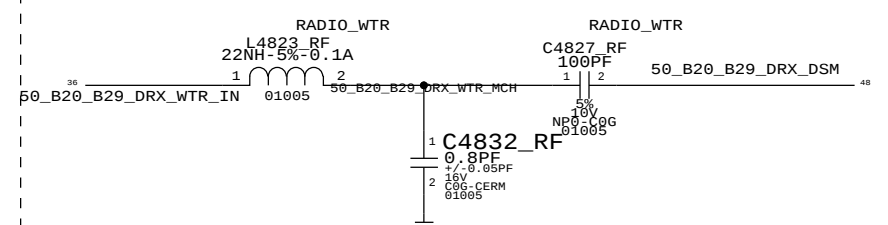
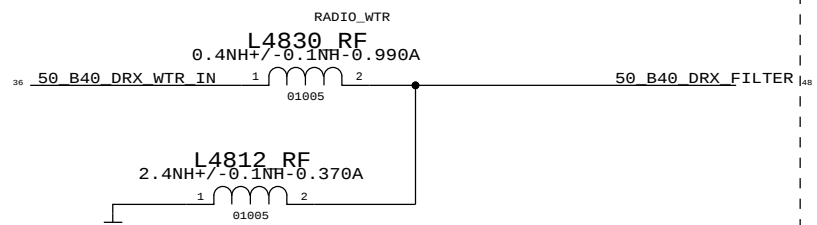
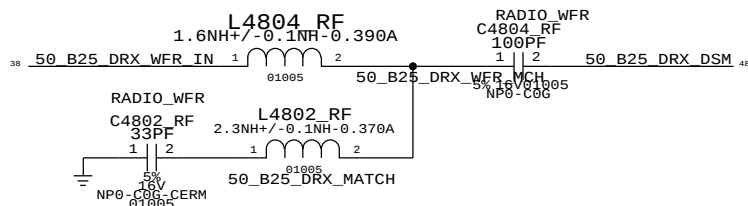
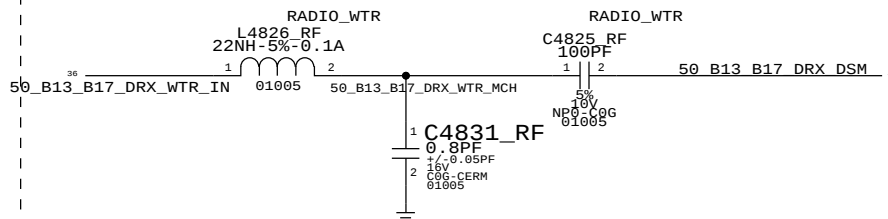
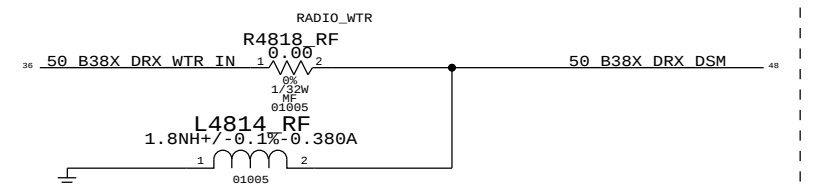
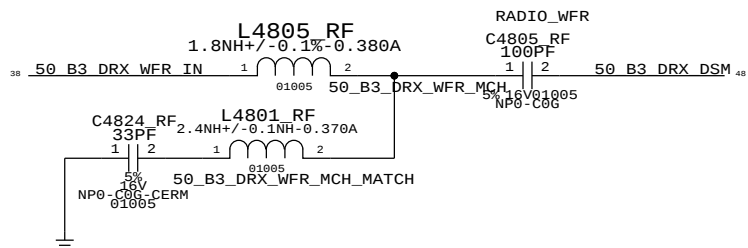
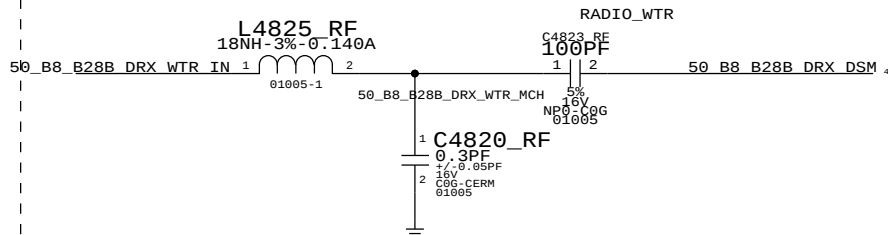
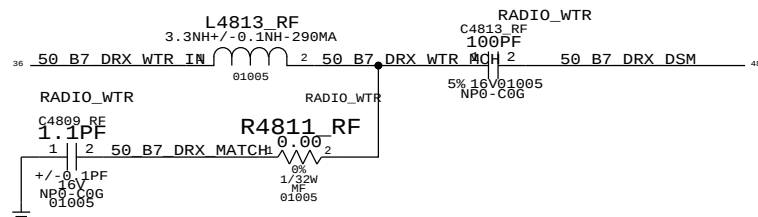
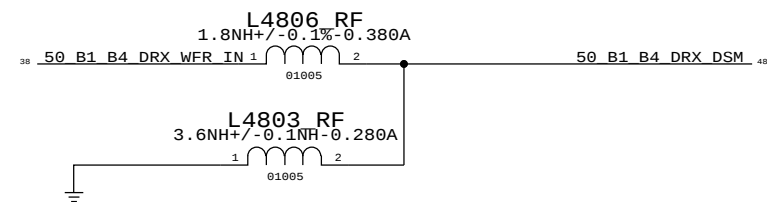
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C4826_RF
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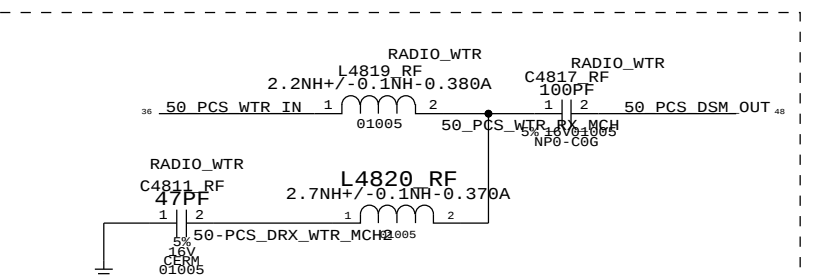
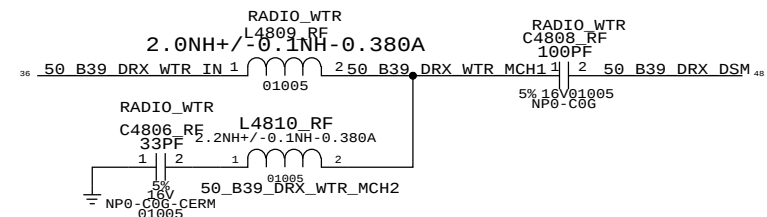
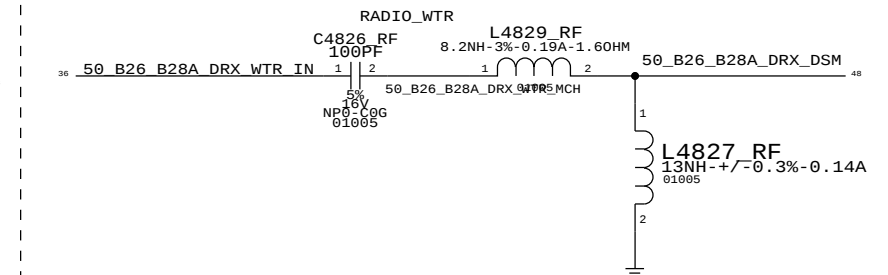
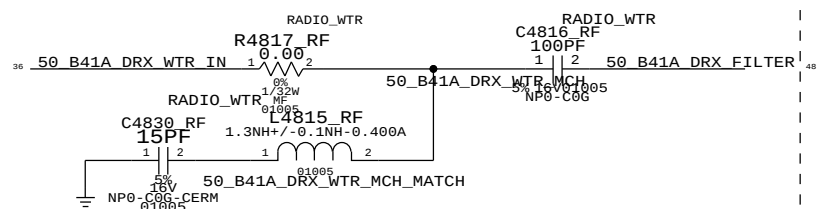
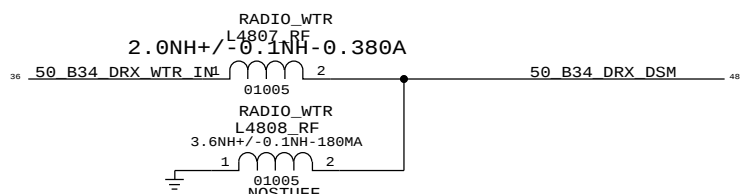
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MIDBAND DIVERSITY - WTR

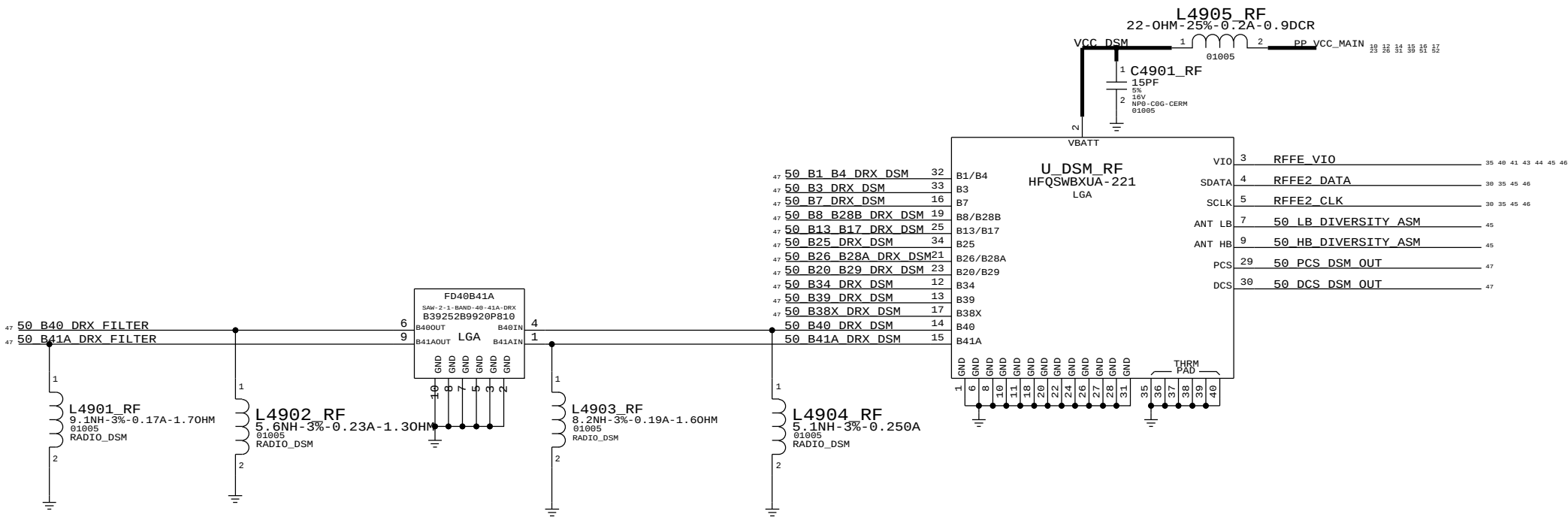


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RX DIVERSITY (2)

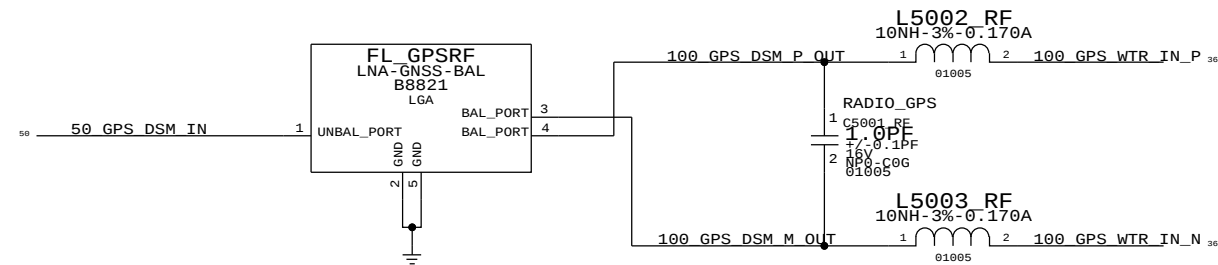
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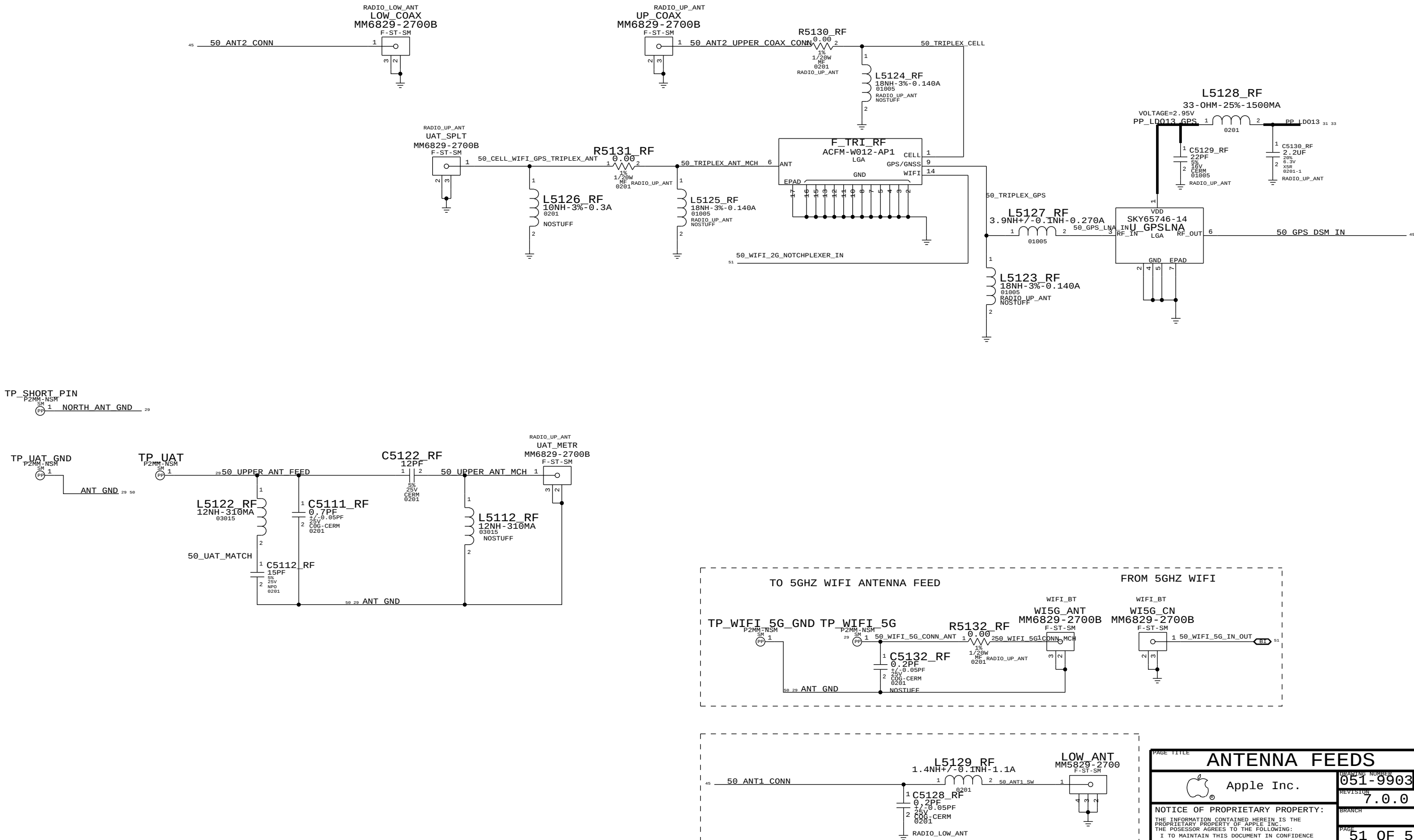
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ANTENNA FEED'S

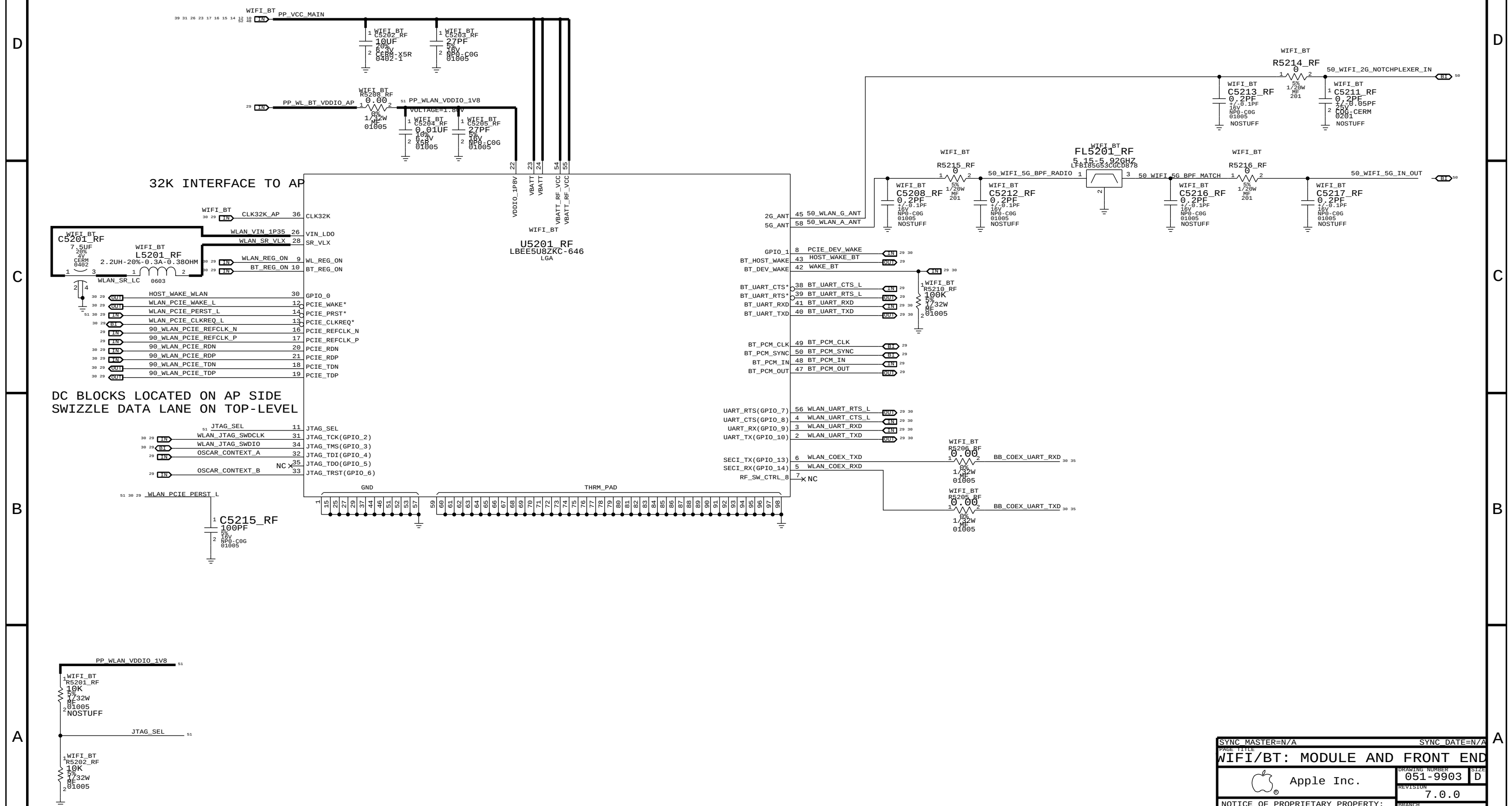
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SYNC MASTER=N/A		SYNC DATE=N/A	
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